TWELFTH ANNUAL REPORT

1982-83

ACADEMIC COUNCIL

Chairman

Vice-Chancellor
Thiru A. Venkataraman, I. A. S.,

Members

Commissioner and Secretary to Government (Agriculture Department)
Selvi M. S. Ramesh, I. A. S.
(upto 23.2.83)
Thiru T. V. Antony, I. A. S.
(from 24.2.83)

Deans

Dr. V. N. Madhava Rao,
Agri. College & Res. Institute,
Coimbatore.
(upto 31.12.82)
Dr. K. R. Ramaswamy,
Agri. College & Res. Institute,
Coimbatore.
(from 1.1.83)
Dr. K. K. Krishnamoorthy,
Agri. College & Res. Institute,
Madurai.
Prof. R. K. Sivanappan,
College of Agrl. Engineering,
Coimbatore.
Dr. V. M. Ramaswamy,
Madras Veterinary College,
Madras.
Dr. M. D. Kuthalingam,
Fisheries College,
Tuticorin.
Dr. P. Chandrasekharan,
Post-Graduate Studies
Coimbatore.
Dr. C. R. Muthukrishnan
Faculty of Horticulture,
Coimbatore.
Director of Research (Agriculture)
Dr. S. Jayaraj,
(upto 31.7.82)
Dr. S. R. Sree Rangasamy,
(upto 31.11.82)
Dr. M. Balasubramanian,
(from 1.1.83)
Director of Reasearch (Animal Science)
Dr. S. Venkatayan
Director of Extension Education
Dr. A. John Knight
Director, CARDS
Dr. V. Rajagopalan
Director, School of Genetics
Dr. S. R. Sree Rangasamy.

Six members among the Heads of Departments nominated by the Vice-Chancellor.

Prof. K. R. Swaminathan,
Department of Agro Energy,
Coimbatore.

Dr. P. Ayyaluswami,
Department of Animal Nutrition,
Veterinary College,
Madras.

Dr. V. D. Guruswamy Raja,
Tamil Nadu Rice Research Institute,
Aduthurai.

Dr. C. A. Gopalakrishnan,
Department of Animal Husbandry,
Agrl. College & Res. Institute,
Madurai.

Dr. R. A. Balaprakasam,
Department of Microbiology,
Veterinary College,
Madras.

Dr. P. Natarajan,
Department of Fish Culture,
Fisheries College,
Tuticorin.

Three members having special knowledge or practical experience in different aspects of agriculture nominated by the Vice-Chancellor.

Dr. C. N. Sambandam,
Professor and Head,
Department of Agrl. Botany,
Annamalai University,
Annamalainagar.

Dr. R. Sakthivadival,
Director,
Centre for Water Resources,
Perarignar Anna University of Technology,
Madras.

Dr. A. Gnanam,
Professor of Plant Physiology,
School of Biological Sciences,
Madurai Kemaraj University,
Madurai.

Secretary

Dr. Y. B. Morachan,
Registrar
(upto 31.7.82)

Dr. S. Jayaraj,
Registrar
(from 1.8.82)

TAMIL NADU
AGRICULTURAL UNIVERSITY

TWELFTH ANNUAL REPORT

April 1, 1982 to March 31, 1983

BOARD OF MANAGEMENT

Chairman :

Vice-Chancellor	: Thiru A. Venkataraman, I.A.S.

Members

Commissioner and Secretary to Government	
a. Agriculture Department	: Selvi M.S. Ramesh, I.A.S. (Upto 23—2—83) Thiru T. V. Antony, I.A.S. (From 24—2—83)
b. Finance Department	: Thiru K. J. M. Shetty, I.A.S.
Director of Agriculture	: Thiru S. A. Subramani, I.A.S. (Upto 28—4—1982) Thiru T. V. Antony, I.A.S. (Upto 23—2—1983) Thiru V. T. Thurairaj, I.A.S. (From 24—2—83)
Director of Fisheries	: Thiru C. Chellappan, I.A.S. (Upto 24—3—1982) Thiru V. Sankarasubbaiyan, I.A.S. (From 25—3—1982)
Director of Animal Husbandry	: Tmt. Latika D. Padalkar, I.A.S. (Upto 25—7—1982) Thiru. V. Manivannan, I.A.S. (From 26—7—1982)
Chief Conservator of Forests	: Thiru T. Achaya, I.F.S.
Agricultural Scientist	: Prof. A. Subramaniam
Crop Farmer	: Thiru W.P.A.R. Rajaram (Upto 29—5—1982) : Thiru A.D. Jeyam Pandian (From 26—7—1982)

Livestock Farmer	: Thiru P.S. Rajagopal Naidu (Upto 29—5—1982) Thiru T. Ramachandran (From 26—7—1982)
Nominee for Agro-Industries	: Thiru K. Ramasami (Upto 29—5—1982) *Thiru K. Liakath Alikhan* (From 26—7—1982)
Women Social Worker	: Tmt Jaya Arunachalam (Upto 29—5—1982) Tmt. E.V.K. Sulochana Sampath (From 26—7—1982)
Educationist	: Thiru T.S. Avinashilingam Chettiar (Upto 29—5—1982) Thiru K. Mohanarangam (From 26—7—1982)
Nominee of ICAR	: Dr. V. Nagarajan Assistant Director General (Nutrition), New Delhi (Upto 29—5—1982) Dr. K. Mohan Naidu (From 30—5—1982)
Member of Legislative Assembly	: Thiru K. Kuppusamy, MLA
Member of Legislative Council	: Thiru M. Sankaralingam, MLC
Member-Secretary	
Registrar	: Dr. Y.B. Morachan (Upto 31—7—1982) Dr. S. Jayaraj (From 1—8—1982)

1. INTRODUCTION

The Twelfth Annual Report of Tamil Nadu Agricultural University covers the period from 1—4—1982 to 31—3—1983. The concerted efforts of the scientists of various disciplines brought forth 17 new varieties of crops and the development of several techniques for improving crop, animal and fish productivity. The Directorate of Extension Education followed a multi-pronged approach in disseminating research findings. It functioned in liaison with Development Departments of the State for effective transfer of technology.

The major achievements in the realms of educatiion, research and extension education are given below :

Education

The following new departments were established to strengthen research and teaching activities

i. Department of Agro-Energy, College of Agricultural Engineering

ii. Regional Centre in Bio-Energy at the main campus.

iii. Department of Agricultural Statistics, Agrl. College and Research Institute, Coimbatore

The following advanced centres came into being :

i) Institute of Animal Nutrition at Kattupakkam

ii) Post-Graduate School of Plant Protection at the main campus

iii) Water-Technology Centre at the main campus

New degree programmes introduced are detailed below :

i) Ph.D. in Preventive Medicine and Veterinary Pathology at the Madras Veterinary College

ii) M.V.Sc. in Veterinary Public Health and Epidemiology at the Madras Veterinary College

iii) M.F.Sc. (Master of Fishery Science) at the Fisheries College, Tuticorin

A Chair in Agricultural Marketing was instituted with assistance from State Marketing Federation

Under Faculty Improvement 56 teachers were deputed for higher studies in the University, 6 to other Universities in the Country, and 19 to Institutions outside the Country.

The Agricultural Statistics and Mathematics wings were strengthened for research and teaching activities.

The Regional Research Stations were upgraded for Post-graduate research leading to Masters' and Ph.D. degrees.

Future Focus

The University has formulated a number of new educational programmes. Some of them are:

i) Starting of another Agricultural/Veterinary College

5 Prof. R. K. Sivanappan
Dean
College of Agrl. Engineering.

6 Dr. S. Muthuswamy
Dean (Horticulture)

7 Dr. A. John Knight
Director of Extension-Education.

8 Dr. S. Venkatayan
Director of Research (Ani. Science)

9. Dr. V. Rajagopalan
Director, CARDS

10. Dr. S.R. Sree Rangasamy
Director, School of Genetics

11. Dr. K. K. Krishnamoorthy
Dean, Agrl. College & Res. Instt.
Madurai

12. Dr. P. Kothandaraman
Dean
Veterinary College
Madras

13. Dr. M. D. K. Kuthalingam
Dean
Fisheries College
Tuticorin

14. Dr. M. Balasubramanian
Director of Research (Agri.) -
Member Secretary

Heads of Departments

1. Dr. T. Kumaraswamy
Prof and Head, Department of
Agrl. Entomology, Coimbatore

2. Dr. M.P. Arumugam
Prof. of Extension
Madras Veterinary College

3. Dr. P.K. Aiyasamy
Prof and Head, Department of Agrl.
Economics, Coimbatore

4. Tmt. Dr. C.M. Lalitha
Prof and Head, Dept. of Parasitology
Madras Veterinary College

5. Dr. N. Shanmugham
Prof and Head, Dept. of Plant Patholog
Coimbatore

ii) M.Sc. (Ag.) in Plant Protection

iii) P.G. Diploma in Plant Protection

iv) P.G. Diploma in Plantation Crops.

v) M.E. (Ag.) in Post-Harvest Technology

vi) M. E. (Ag.) in Irrigation and Wate Management

vii) M.E. (Ag.) in Agro-Energy and Powerr

viii) M.V.Sc. in Dairy Technology/Dairy Microbiology/Dairy Chemistry

ix) Ph.D. in Veterinary Physiology

Research

The following new schemes were implemented during the year

1) Establishment of an Agro-Energy Centre at Coimbatore

2) Establishment of a Regional Centre for the Development of Biogas at Coimbatore

3) Tribal Area Research for Buffalo Based Farming in the Nilgiris at Sandynallah

4) Research for the Improvement of Pepper at Thadiyankudisai

5) Field Project to Train Village Women in Sericulture and Dairy Farming at Coimbatore

6) Studies on the *Biochemical Polymorphism* in Poultry at Madras

7) Research on the Improvement of Tree Spices in Tamil Nadu at Thadiyankudisai

8) Biological Effects of Chitin Inhibitor on *Spodoptera litura* and *Heliothis armigera* at Coimbatore

9) Studies on the Management of Pulses Pests *Heliothis armigera* and *Spodoptera litura* in Tamil Nadu at Coimbatore

10) All India Coordinated Research Programmes on Post - Harvest Technology of Horticultural Crops at Periakulam

11) All India Co - ordinated Research Project on Agro-Forestry at Mettupalayam

12) Evolution of High Yielding Crop Varieties Suitable for LBP Area, Bhavanisagar

13) Starting of Post - Graduate Diploma in Horticulture (Plantation Crops/Ornamental Gardening) at Periyakulam

14) Strengthening of Research on Chemistry of Submerged Soils of Thanjavur District at Aduthurai

15) Establishment of Regional Laboratory at Yercaud

16) Establishment of a Unit for conducting Research Studies in Mycotoxin at Coimbatore

17) *Studies on the Nutritive value of* New Varieties and its changes due to Modern Agricultural and Processing Technology at Coimbatore

18) Research on the Introduction of New Tree Species in Tamil Nadu at Thiruvannamalai, Pudukkottai, Tirunelveli and Coimbatore

19) Vegetable Seed Production at Palur

20) Popularisation of Agricultural Implements through Krishi Vigyan Kendra at Coimbatore and Madurai

21) Evolution of Medium Staple Cotton Suitable for Blacksoil Rainfed Tracts of Southern Districts at Kovilpatti.

22) Evolution of Forage Crops Suited to the Milkshed Areas of North-Eastern Districts of Tamil Nadu at Vellore

23) Improvement of Minor Pulses and Synthesising Hybrid Varieties of Sesamum at Coimbatore

24) Development of Suitable Sprayer for Spraying Tall Trees at Coimbatore

25) Studies on the Indigenous pesticides of Plant Origin, Coimbatore

26) Establishment of Rural Observatory, Coimbatore

27) Cost-Price Relationship in Sugarcane and Economic Appraisal in Tamil Nadu at Coimbatore

28) Establishment of Krishi Vigyan Kendra at Tirunelveli and Vellore-Acquisition of Land for NARP Centres

29) Seed Production and Seed Storage Studies in Sub-Tropical and Temperate Crops, Periakulam

30) Improvement of Ground Suitable for Rainfed Areas at Tindivanam

31) Integrated Inter-Disciplinary Collaborative Research on Sorghum at Coimbatore

32) Ad-hoc Research for Highly Ingenious Dryland Methods followed by the Farmers of the Mecheri Valley in Salem District at Coimbatore

33) Establishment of Entomology Res. Unit in the Department of Pathology, Madras Veterinary College, Madras

34) Poultry Research and Development Centre at Pudukkottai

35) Enrichment of Poor Quality Cellulosic Wastes and Pelletting for the Maintenance of work Bullocks and Cows Yielding Less than Five Litres of Milk at Coimbatore and Kattupakkam

36) Control of Abortion in cattle at Erode, Coimbatore and Trichy

37) Scheme for Strengthening of the Department of Animal Husbandry at Agricultural College and Research Institute, Madurai

38) Establishment of Institute of Animal Nutrition at Livestock Research Station, Kattupakkam

39) Electron microscopical and Ultrastructural Studies on Rhinosporiodiosis in Nasal Polyps of Animals and Man at Madras Veterinary College

40) Utilisation of Tree Leaves as a Source of Fodder during Winter in Mountain Regions at Sandynallah

41) All India Coordinated Project for Strengthening Agricultural Research Programme at Sandynallah

42) Starting of a Department of Fishery Economics at Fisheries College, Tuticorin

43) Culture of Brime Shrimp *Artemia salina* at Tuticorin

44) Pollution Monitoring Studies in Tuticorin Waters

45) Mariculture of Fishes at Tuticorin

46) Brackishwater Pen culture at Tuticorin

47) Operational Research Project on Fish Culture, at Pondicherry, Aduthurai, Killikulam and Madurai

48) Establishment of a Mariculture Research Station at Ennore

49) Starting of M.F.Sc. course at Fisheries College, Tuticorin

The research accomplishments of the University are discussed in detail in Chapter 4. The following new varieties of crops were released for Farmers' adoption :

Rice : i) Co 43 ii) Ponmani and iii) Co 44

Millets : i) X5 cumbu and ii) CoH1 Maize

Pulses : Co 4 cowpeaand ii) Co 10 lab lab

Oilseeds : i) Co 1 gingelly and ii) Co 1 sunflower

Cotton ; MCU 10

Sugarcane : CoC 8201

Forage Crops : i) Co 1 cumbu-Napier hybrid grass and

ii) Hedge Lucerne

Fruit crops : i) Co 1 Pomegranate ii) Co 3 Papaya and iii) Co 4 Papaya

Spices ; Co 1 turmeric

Several promising lines of crops have been identified and they are in the pipeline for release as new varieties.

National Agricultural Research Projects

The University has identified the following lead centres for different Crops

1) Tamil Nadu Rice Research Institute, Aduthurai	Rice
2) Regional Research Station, Vridhachalam	Oilseeds
3) School of Genetics, Coimbatore	Millets (except ragi)
4) Regional Research Station, Paiyur	Ragi and Horsegram
5) National Pulses Research Centre, Vamban	Pulses (except horsegram)
6) Cotton Research Station, Srivilliputtur	Medium Staple Cotton
7) School of Genetics, Coimbatore	Long and Extra Long staple Cotton
8) Sugarcane Research Station, Cuddalore	Sugarcane
9) Dept. of Forage Crops, Coimbatore	Forage Crops

Linkages with Extension Staff

Regional Research Councils have been constituted for the North-eastern, North-western, Cauvery Delta, Western, Southern and Hilly Zones of Tamil Nadu. The Council for high Rainfall Zone will be constituted after implementation of NARP programme. The Councils are represented by Scientists, extension officers and progressive farmers from the respective zone. The council Meetings are organised twice a year. The linkages with extension staff are brought about by the Council Meetings besides periodical T & V Workshops.

Extension Education

The Directorate of Extension Education disseminated the research innovations through training programmes for the extension personnel of the Development Departments and other Government Officials; demonstrations of National Demonstration Scheme; Plant Clinic Centres; Krishi Vigyan Kendras; Farm School on All India Radio programmes; Television Programmes; Correspondence courses and Farmers' Days; Exhibitions, answering farmers' querries, writing for dailies and other magazines, etc. engaged the attention of the Extension Directorate.

In addition, the Section Coordinated the implementation of the following programmes

i) Village adoption under new 20 Point Programme

ii) Lab to Land Programme and

iii) Breeder Seeds Productive at various TNAU Centres.

2. UNIVERSITY ADMINISTRATION

Officers of the University

Chancellor	:	Thiru Sadiq Ali (His Excellency Governor of Tamil Nadu) (Upto 2—9—1982) Thiru S.L. Kurana (His Excellency Governor of Tamil Nadu) (From 3—9—1982)
Pro-Chancellor	:	Dr. K. Kalimuthu Hon'ble Minister for Agriculture
Vice-Chancellor	:	Thiru A. Venkataraman, I.A.S.
Registrar	:	Dr. Y.B. Morachan (Upto 31—7—1982) Dr. S. Jayaraj (From 1—8—1982)
Comptroller	:	Thiru P.V. Krishnamoorthy (Upto 2—6—1982) Dr. Y.B. Morachan (Upto 31—7—1982) Dr. S. Jayaraj (Upto 31—1—1983) Dr. V. Rajagopalan (Upto 6—3—1983) Thiru V. Sourirajan (From 7—3—1983)
Dean, Agricultural College & Research Institute, Coimbatore	:	Dr. V.N. Madhava Rao (Upto 31—12—1982) Dr. K. R. Ramasamy (From 1—1—1983)

Dean, Agricultural College & Research Institute, Madurai	:	Dr. K.K. Krishnamoorthy
Dean, Veterinary College, Madras	:	Dr. V.M. Ramasamy
Dean, College of Agricultural Engineering, Coimbatore	:	Prof. R.K. Sivanappan
Dean, Faculty of Horticulture, Coimbatore	:	Dr. C. R. Muthukrishnan
Dean, Post Graduate Studies, Coimbatore	:	Dr. P. Chandrasekaran
Dean, Fisheries College, Tuticorin	:	Dr. M.D.K. Kuthalingam
Director of Research (Agri.) Coimbatore		Dr. S. Jayaraj (Upto 31—7—1982) Dr. S R. Sree Rangaswamy (Upto 31—12—1982) Dr. M. Balasubramanian (From 1—1—1983)
Director of Extension Education, Coimbatore	:	Dr. A. John Knight
Director, School of Genetics, Coimbatore	:	Dr. S.R. Sree Rangasamy
Director, Centre for Agricultural and Rural Development Studies, Coimbatore	:	Dr. V. Rajagopalan
Director of Research (Animal Sciences)	:	Dr. S. Venkataiyan

Meeting of the Board of Management

During the year under report, the Board of Management met three times on 28-6-82, 6-10-82 and 27-12-82. The following are some of the important decisions, approvals and sanctions of the Board of Management :-

1 Annual Accounts of the University for the year 1980-81.

2 Budget Estimate for 1992-83 of the Krishi Vigyan Kendra, Pondicherry.

3 Reconstitution of the Managing Committee of the Krishi Vigyan Kendra, Pondicherry.

4 Annual Report of the University for the year 1980-81.

5 Coustitution of Steering and Executive Committees of the Water Technology Centre, Coimbatore.

6 Continuance of certain Plan Schemes in the University for the period upto 31-3-1985.

7 Establishment of Water Technology Centre, Coimbatore fully financed by the SIDA for the period upto 31-3-1985.

8 Establishment of a new wing for teaching and research in Veterinary Public Health and Epidemiology during 1982-83

9 Implementation of a research project on election microscopical and ultrastructural studies on Rhinosporidiosis of nasal polyps of animal and man at Madras during 1982-83.

10 Implementation of a project for integrated inter-disciplinary collaborative research on sorghum during 1982-83.

11 Implementation of a scheme fully financed by the Ford Foundation for Training farm women in enterprise management at Coimbatore during 1982-83.

12 Establishment of diagnostic laboratory at Dharmapuri during 1982-83.

13 Institution of a chair in Agricultural Marketing Management at CARDS, Coimbatore.

14 Conversion of Multi-crop Experiment Stations at Palur and Pattukkottai as Seed Production Centres.

15 Affiliation to Sri Ramakrishna Mission Vidyalaya, School of Agriculture, Coimbatore, to offer Diploma in Agriculture Course.

16 Prescription of Academic Robes for B.Sc. (Home Science) degree programme

17 Starting of M.F.Sc. degree programme from the academic year 1982-83.

18 Increase in the admission strength of B.E. (Ag) degree programme during 1982-83.

19 Nomination of Tmt. E.V.K. Sulochana Sampath and Dr. K. Mohan Naidu, Members to the Finance Committee and Managing Committee of Krishi Vigyan Kendra, Pondicherry respectively.

20 Free gift on an equipment offered by M/S Blue Star Limited, Madras, to the Madras Veterinary College, Madras.

21 Delegation of powers to the Vice-Chancellor to sanction purchase of equipments under NARP.

22 Rs. 9.00 lakhs towards construction of a workshop building at Coimbatore

23 Rs. 6.00 lakhs towards construction of a field laboratory and storage godown at Kovilpatti.

24 Rs. 3.50 lakhs towards Construction of one ice freezing plant building at Tuticorin.

25 Rs 1.87 lakhs towards construction of Vehicle shed and office-cum-store room at Coimbatore.

26 Rs. 17 85,900/- towards construction of 11 buildings at Aduthurai under NARP.

27 Rs. 21,09,300/- towards construction of 11 buildings at Paiyur under NARP.

28 Rs. 9,89,500/- towards construction of buildings at Trichy under NARP.

29 Rs. 5.07 lakhs towards construction of one laboratory for the scheme for Biological control at Coimbatore under NARP.

30 Rs. 5.03 lakhs towards construction of buildings at Coimbatore Madurai and Trichy for the Krishi Vigyan Kendras under Trysem.

31 An additional amount of Rs. 94,300/- towards construction of buildings for Poultry unit at Coimbatore.

32 Rs. 1.15 lakhs towards construction of one Associate Professors quarters at Bhavanisagar.

33 Rs. 1.00 lakh towards construction of basic servants quarters at Tuticorin.

34 Rs. 1.20 lakhs towards construction of Assistant Professors quarters at Yercaud.

35 Rs. 2.15 lakhs towards purchase and installation of one diesel generator for Wetlands, Coimbatore.

36 Rs. 1,71,800/- towards electrical and other works for the Microbiology building at Madras.

37 Rs. 5 00 lakhs towards purchase of one X-ray plant for the Department of Surgery, Madras.

38 Rs. 3 39 lakhs towards purchase of one gas chrometograph for the Department of Agrl. Entomology, Coimbatore.

39 Rs. 2,35,542 towards purchase of one ultracentrifuge for the Department of Biochemistry, Coimbatore.

40 Rs. 1.67 lakhs towards purchase of one gas chromotograph for the scheme for Biological Control, Coimbatore under NARP.

41 Rs. 1,14,622 towards purchase of one spectrophotometer for the Regional Research Station, Vriddhachalam.

42 Change in name of NARP sub-centre at Trichy as Soil Salinity Research Centre.

43 Disciplinary powers for the posts of Research Associate.

44 Deputation of three scientists to Vietnam to work in the establishment of a Rice Research Institute.

45 Revision of scale of pay for provincialised mazdoors and also the qualifications and scale of pay for the post of Chick-Sexer.

Meetings of the Academic Council:

The Academic Council met twice and the following important decisions were taken :

1. Recommended the establishment of a new wing for research and teaching in veterinary public health and epidemiology in the Department of Preventive Medicien, Veterinary College, Madras.

2. Approved the setting up of a Department of Agricultural Statistics and the creation of a post of Professor of Agrl. Statistics in the Agrl. College and Research Institute, Coimbatore.

3. Permitted the admission of Livestock Inspectors into B. V. Sc. degree programme.

4. Accepted the craft syllabi of Post-Graduate Diploma in Plant Protection.

5. Agreed to the institution of a chair in agricultural marketing and the creation of a division of Agricultural Marketing Management under CARDS.

6. Ratified the shifting of the venue of Post-graduate Diploma in Plantation Crops Programme from the Horticultural Research Station, Periakulam to the Horticultural Research Station, Thadiyankudisai.

Board of Studies:

The previous-year-constituted Boards of Studies in Agriculture, Agricultural Engineering, Veterinary and Animal Sciences, Horticulture and Fisheries Science continued to function in the period under report. Each Board consisted of the following members :

- i Dean of the Faculty — Chairman
- ii Other Deans in the Faculty
- iii Heads of Departments in the Faculty
- iv All the Professors in the Faculty
- v Two elected representatives from among the Associate Professors and four from among Assistant Professors.
- vi. Two experts in the concerned subjects *from outside the University nominated by* the Vice-Chancellor.
- vii. One or more Deans of other Faculties of the University nominated by the Vice-Chancellor.

Faculty of Agriculture

Elected Members

i. Dr. S. Rajasekaran,
Associate Professor of Agrl. Botany,
Agrl. College and Research Institute,
Madurai.

ii. Thiru K. Saivaraj,
Associate Profesor of Agrl. Entomology,
Agrl. College and Res. Institute,
Coimbatore

iii. Thiru A. Balasubramanian
Assistant Professor of Agronomy,
Agrl. College and Res. Institute,
Coimbatore

iv. Thiru T.L. Baskaran,
Assistant Professor of Plant Pathology,
Agrl. College and Res. Institute,
Coimbatore

v. Thiru M. Swamiappan
Assistant Professor of Agrl. Entomology,
Agrl. College and Res. Institute,
Coimbatore.

vi. Thiru S. Jebaraj,
Assistant Professor of Agrl. Botany,
Agrl. College and Res. Institute,
Madurai.

Nominated Members

i. Prof AR. Lakshmanan
Dean,
College of Agriculture,
Annamalai University,
Annamalai-Nagar.

ii. Dr. R B. Patil
Director of Instructions (Agri)
College of Agriculture,
Dharwar.

Meeting

The Board of Studies had a meeting and recommended the following to the Academic Council :

1 Alterations in the syllabus for the third B.Sc. (Ag.) programme, to be introduced from the year 1982-83

2 Starting of a School of Post-Graduate Diploma in Plant Protection

3 Uniform pattern of education for the diploma courses and revision of total credits from 2 to 5 in nematology.

4 Revision of certain courses in the curricula and syllabi of the M.Sc. programme in Sugarcane Production.

5 Approval of four new courses in microbiology for Post-graduate programme.

6 Shifting the course Residential Practice (0+3) from second year to third year.

7 Approval of draft syllabi of Post-graduate Diploma in Plant Protection.

8 Consent on the admission requirements of the candidates to the Post-graduate Diploma in Plant Protection.

Faculty of Agrl. Engineering
Elected Members

i. Thiru M. Balasubramanian
Associate Professor
College of Agrl. Engineering
Coimbatore

ii. Thiru R. Manian
Associate Professor
College of Agrl. Engineering
Coimbatore

iii. Thiru K. Rangasamy
Assistant Professor
College of Agrl. Engineering
Coimbatore

iv Thiru K. Arumugam
Assistant Professor
College of Agrl. Engineering
Coimbatore

v Thiru R. Kailappan,
Assistant Professor,
Cellege of Agri. Engineering,
Coimbatore

vi Thiru K. Raju,
Assistant Professor,
College of Agrl. Engineering,
Coimbatore.

Nominated Members:

i Dr. R. Lal,
Dean,
College of Agrl. Engineering,
Orissa Agricultural University,
Bhubaneswar.

ii Thiru G. Ramana Reddy,
Professor and Head,
Department of Agrl. Engineering,
Andhra Pradesh Agrl. University,
Rajendranagar.

Meeting:

The Board of Studies had a meeting and recommended the following subjects to the Academic Council for its consideration.

i Approved the courses in the restructured syllabus as equivalent for the courses in the old syllabus.

ii Agreed to the change of certain course numbers.

iii Suggested the course contents of Agrl. Extn. 203 in the place of Agrl. Extn. 201.

iv Approved the conduct of coaching classes for vocational stream boys instead of offering bridge courses.

v Accepted the syllabus for the third year B. E. (Ag.) standing.

vi Recommended the admission of Diploma holders in Civil and Rural Engineering for admission to B. E. (Ag.) degree programme.

Faculty of Veterinary and Animal Sciencies :

i Dr. R. Kadirvel,
Associate Professor of Animal Nutrition,
Veterinary College,
Madras (Upto 19-1-83).

ii Dr. B. M. Eswaran,
Associate Professor of Animal Genetics,
Veterinary College,
Madras (from 20-1-83)

iii Dr. M. S. Gopal,
Associate Professor of Clinics,
Veterinary College,
Madras (Upto 19-1-83)

iv Dr. P. A. Balu,
Associate Professor of Pharmacology,
Veterinary College,
Madras (from 20-1-83)

v Dr. B. Gowrisankar,
Assistant Professor of Pharmacology,
Veterinary College,
Madras (upto 19-1-83)

vi Dr. R. S. Viswanathan,
Assistant Professor of Livestock Production and Management,
Veterinary College,
Madras (from 20-1-83)

vii Dr. R. Kumararaj,
Assistant Research Officer,
Poultry Research Station,
Madras (upto 19-1-83)

viii Dr. P. Dhanapalan,
Assistant Professor of Therapeutics,
Veterinary College,
Madras (from 20-1-83)

ix Dr. V. D. Padmanaban,
Assistant Professor of Microbiology & Bio-chemistry,
Veterinary College,
Madras (Upto 19-1-83)

x Dr. R. Subramanian,
Assistant Professor of Extension,
Veterinary College,
Madras (from 20-1-83)

xi Dr. A. M. Shanmugam,
Assistant Professor of Lab. Animal Medicine,
Veterinary College,
Madras (upto 19-1-83)

xii Dr. P. Thangaraju,
Assistant Professor,
Directorate of Research (Animal Sciences)
Madras (from 20-1-83)

Nominated Members :

i Dr. K. Sathyanarayana Rao,
Principal,
College of Veterinary Science,
Tirupathi (upto 19-1-83)

ii Dr. A. Rama Mohana Rao,
Professor and Head,
Department of Animal Genetics and Principal i/c,
College of Veterinary Science,
Tirupathi (from 20-1-83)

iii Dr. V. Venkiah,
Principal,
College of Veterinary Science,
Andhra Pradesh Agricultural University,
Hyderabad (upto 19-1-83).

Dr. M. Krishnan Nair
Dean, College of Veterinary Science,
Mannuthy, Trichur (from 20-1-83).

Meeting :

The Board of Studies conducted a meeting and recommended the following subjects to the Academic Council.

i Syllabus for Ph.D. Programme in Preventive Medicine and Pathology.

ii Syllabus for M. V. Sc. in Veterinary Public Health and Epidemiology.

iii New Post-Graduate courses and modification in the credit load and course contents of certain course in Animal Science.

Faculty of Horticulture :

Elected Members :

1 Thiru V. Palanisamy,
Associate Professor,
Faculty of Horticulture,
Coimbatore.

2 Dr. (Mrs) Seemanthini Ramdas,
Associate Professor,
Faculty of Horticulture,
Coimbatore.

3 Thiru P. Selvaraj,
Assistant Professor,
Faculty of Horticulture,
Coimbatore.

4 Thiru T. Thangaraj,
Assistant Professor,
Faculty of Horticulture,
Coimbatore.

5 Thiru E. Vadivel,
Assistant Professor,
Faculty of Horticulture,
Coimbatore.

6 Thiru L. R. Rajasekaran,
Assistant Professor,
Agri. College and Res. Institute,
Madurai.

Nominated Members :

1 Dr. U. V. Sulladmath,
Professor and Head,
Department of Horticulture,
University of Agri. Science,
GKVK Campus, Bangalore.

2 Dr. P. C. Sivaraman Nair,
Director of Research,
Kerala Agricultural University,
Vellankara,
Tiruchur.

Meeting :

The Board of Studies met once and recommended the following topics to the Academic Council.

1 Restructed B.Sc. (Hort) syllabi with modifications to the syllabi already approved.

2 Approved course for II, III & IV B. Sc. (Hort.) standing with certain readjustments.

3 Reducing the credit load for Horticulture 812 Commercial Floriculture from 3+1 to 2+1.

Faculty of Fisheries :

Elected Members :

i Dr. G. Jagatheesan,
Associate Professor,
Fisheries College,
Tuticorin.

ii Dr. N. Sukumaran,
Assistant Professor,
Fisheries College,
Tuticorin.

iii Dr. V. Sundararaj,
Assistant Professor,
Fisheries College,
Tuticorin.

iv Dr. R. Santhanam,
Assistant Professor,
Fisheries College,
Tuticorin.

v Thiru C. Ratnam Nadar,
Assistant Professor.
Fisheries College,
Tuticorin.

Nominated Members

i. Prof. H.P.C. Shetty
Director of Insturctions
College of Fisheries
Mangalore

ii. Prof. R. Natarajan
Director
Centre of Advanced Studies in
Marine Biology
Annamalai University
Portonovo

Meeting

The Board of Studies had a meeting and recommended the following subjects to the Academic Council.

1 Inclusion of practicals for the course Tamil spoken and essay writting (Tamil 101)

2 Certain additions and deletions in the course, Bio-chemistry (F. Biochem. 201) and Fish in Nutrition (F. Biochem. 401)

3 Change of course title Fishery Biolog (F. Biol. 203)

4 Certain revisions and changes of title fo the course Cellulas Physiology and Bio-chemistry.

5 Change of credit hours for the course Biological Occanography.

6 Revision of syllabus for the optional course-Quality Control (F.Tech. 401)

7 Change of optional course Nutrients in Aquatic Systems instead of Marine Planktology.

Board of Examinations

The Board of of Examinations met once during the year under report. The following decisions were taken.

1 Ratified the changes made in the appointment of External Examiners for May, 1982 Examination.

2 Reviewed, moderated and provisionally declared the results of May, 1982 B.V.Sc. candidates.

3 Recommended extension of time of three years (i.e) upto June, 1985 for the students of B. V. Sc. who have not completed their course under traditional system and suggested for the conduct of supplementary examination for those students twice a year i e during June and December.

Courses and Curricula

The trimester system of education was followed for the B.Sc. (Ag.), B.Sc. (Hort.), B.Sc. (Home Science) B.V.Sc., B E. (Ag.), B F.Sc., M.Sc. (Ag.), M. Sc. (Hort.), M.Sc.

(Sugarcane Production) M.E. (Ag.), M.V.Sc., M.F.Sc. and Ph.D. of all disciplines.

Students Admission

A total of 10,295 applications prescribed for the degree courses in Agriculture, Horticulture, Fishery Science and Veterinary Science was received.

The distribution of applications is presented in the following table.

Details of degree	No. of applications received	Available seats
B.Sc. (Ag.)	4446	212
B.Sc. (Hort.)	738	40
B.F.Sc.	590	20
B.V.Sc.	1491	116
B.E. (Ag.)	2156	75
B.Sc. (Home Science)	875	20

With regard to Post-Graduate degree programmes the following are the relevant details.

Degree	No. of applications received	Available seats
M.Sc. (Ag.)	320	190
M.E (Ag.)	14	10
M.V.Sc.	99	85
M.Sc. (Hort.)	39	20
M F Sc.	5	5

There were 103 applications against 86 seats in Ph. D. degree programmes in the faculties of Agriculture, Horticulture and Animal Sciences.

The following Committees were appointed by the Vice-Chanceller for the selection of candidates to various under-graduate degree programmes.

B.Sc. (Ag.)	Dr. K. K. Krishnamoorthy Dr. V. N. Madhava Rao Thiru. K. Muthusamy Dr. A. John Knight and Dr. C. R. Muthukrishnan
B.Sc. (Hort)	Dr. C. R. Muthukrishnan Dr. V. Rajagopalan and Thiru M. C. Appaiyan
B.F.Sc.	Dr. M. D. K. Kuthalingam Dr. P. Chandrasekaran Thiru R. Srinivasan
B.V.Sc.	Dr. V. M. Ramaswamy Dr. S. Venkatayan and Dr. M. Thangam
B.E. (Ag.)	Prof. R. K. Sivanappan Thiru K. T. Narayanan and Dr. V. Rajagopalan
B.Sc. (Home Sci)	Dr. K. K. Krishnamoorthy Dr. S. Neelakantan and Tmt. Sushila Thirumaran
M.Sc. (Ag.) and Ph.D.,	Dr. P. Chandrasekaran Dr. V. N. Madhava Rao Dr S. Jayaraj and Professor of the concerned Department
M.Sc. (Hort.) and Ph.D.,	Dr. C. R. Muthukrishnan Dr. S. Jayaraj and Professor of the concerned department.
M.E. (Ag.)	Prof. K. R. Swaminathan Dr. P. Chandrasekaran Dr. S. Jayaraj and Professor of the concerned department.
M.V.Sc. and Ph D.	Dr. V. M. Ramaswamy Dr. P. Chandrasekaran Dr. S. Jayaraj and Professor of the concerned department.

The candidates selected for admission by the above committees were approved by the Vice-Chancellor. The classes commenced on 8-11-82 for all the Under-graduate Programmes except B.V.Sc. which began on 18-11-82. The classes were held on 17-11-82 for the M.V.Sc., M.Sc., (Ag.) M.Sc., (Hort) and M.E. (Ag.) P.G. Programmes The classes for Ph.D. in Agri. and Veterinary were started on 23-2-83 and 28-2-83 respectively.

University Examinations :

The University Examinations for B.V.Sc. were conducted during May, 1982 and the results were published in June, 1982.

The University Examinations for the supplementary students of the fifth and final year B.V.Sc. Part II were held in May, 1982 and December, 1982 respectively and their results were published in June, 1982 and March, 1983 respectively.

Trimester System of Education :

During the year under report, 179 B.Sc. (Ag.), 20 B.Sc. (Hort), 18 B.F.Sc., 44 B.E. (Ag.), 5 M.Sc., 8 M.Sc. (Hort.), 120 M.Sc. (Ag.), 25 M.V.Sc., 6 M.E. (Ag), 39 P.G. Diploma in Sericulture and 34 Ph.D. students successfully completed their degree programmes.

Seminars and Workshops

National Seminar on 'Medicinal and Aromatic Plants' was conducted on 28th and 29th September, 1982 at Coimbatore.

National Seminar on 'Transfer of Farm Technology' was organised at Coimbatore on 4-10-82.

National Seminar on 'Seed Pathology' was held on 30th and 31st December 1982 at Coimbatore.

A workshop on 'Poverty and Malnutrition' was organised at Coimbatore by the Department of Food Science & Nutrition from 7th to 10th February, 1983. The workshop was sponsored by the UNICEF under the EFNAG programme.

National Seminar on 'Drip Irrigation' was held at Coimbatore on 5th and 6th March, 1983.

National Seminar on 'Utilisation of Organic 'Wastes' was conducted at Madurai on 24th and 25th March, 1983.

National Seminar on 'Anatomy and its Applications, was organised at Veterinary College, Madras on 14th and 15th March, 1983.

Special Lecture :

Dr. H. K. Pande, Director, Central Rice Research Institute, Cuttack delivered Dr. G.V. Chalam memorial lecture on "Rice Technology" at Coimbatore on 19-11-82.

Important Events :

Dr. Maheshwar Dayal, Adviser, Department of Science and Technology inaugurated the Agro-Energy Centre at Tamil Nadu Agricultural University, Coimbatore, on 22-5-82. The Vice-Chancellor presided over the function.

Dr. K. Kalimuthu, Hon'ble Minister for Agriculture, Government of Tamil Nadu opened the building for Post-graduate school of Plant Protection at Coimbatore on 6-6-82.

The first Scientific Workers' Conference on Agricultural Engineering was held on 13-9-82.

The eleventh convention of the Indian Agricultural Universities Association was held at Coimbatore from 20 9-82 to 22-9 82. The Vice-Chancellor presided over the inaugural session.

Dr. O. P. Gautam, Director General, I. C. A. R., New Delhi inaugurated the Water Technology Centre fully financed by the Swedish International Development Authority en 20-9-82 at Coimbatore.

The valedictory function of the first batch of Post-graduate diploma in Sericulture was held on 20-12-82. Thiru K A. Krishnaswamy, Hon'ble Minister for Rural Industries, distributed the diplomas.

Visitors to T.N.A.U.

1 Dr. K. Kalimithu, Hon. Minister for Agriculture declared open the P.G. School of Plant Protection on 15—6—82 at Coimbatore.

2 The participants of the 'FAO Inter-Country Training Programme in Biological Control with Special Reference to Rice' visited the Department of Agricultural Entomology, Coimbatore on 23—10—82.

3 Prof. Han. Chun-ru and Prof. Lie Xun-hao of Peking Agricultural University, Peking, China, Dr. Lumpkin, University of Hawaii, Honolulu, USA and Dr. Hubbel, University of Florida, USA paid a visit to the Tamil Nadu Rice Research Institute, Aduthurai.

4 Mr. Timothy, Research Officer, Nigeria, J.F. Coloane, Programming Officer, UNICEF, and Mrs. Shahwa Eligizarli, Minister of Education and Nutrition Education, Kenya, went round the Food Tech. Department, Coimbatore.

5 Dr. F. J. Moutapa, Senior Officer, Environment and Energy Programmes Coordinating Unit, FAO, Rome, Dr. Ronald H. Kemp, Forestry Advisor, Overseas Development Administration London, UK and Dr. Carl M. Gallegos, USAID, Washigton D. C., visited the Forestry Research Station of TNAU at Mettupalayam.

6 Dr. S. Stone, Director, USAID, American Embassy, New Delhi paid a visit to the Department of Farm Machinery, TNAU.

Staff Activities

Dr. S. Chelliah, Professor of Agricultural Entomology participated in the FAO - IRRI Workshop on 'Judicious and Efficient use of Insecticides on Rice' at Phillipines from 21—2—83 to 23—3—83.

Dr. T.K Kandasamy, Professor of Plant Pathology, Dr. J. Chandra Mohan, Professor of Agricultural Botany and Dr. M. Balasubramaniam, Professor of Agricultural Entomology were deputed as experts to Vietnam to establish a Rice Research Institute in the Country.

Finance and Accounts

The following statement indicates the classified summary of the transactions of the University during 1982-83.

(Rs. in lakhs)

Details		Amount
Opening Balance as on 1-4-1982		125.73
Receipts		
Grant: State Government		
Agriculture Grant	445 88	
Veterinary Grant	229.47	
Fisheries Grant	32.97	
		708.32
ICAR Grant		
For Agricultural Research Schemes	219.47	
For Development Grant	103.20	
For Veterinary Research Schemes	9.57	
Grants to Krishi Vigyan Kendra, Pondicherry	4.71	
		336.95
Government of India Grant		
For Agricultural Research Schemes	11.90	11.90
Outside Agencies		
For Foreign and Indian Agencies Research Schemes	18.95	
For National Service Scheme	0.38	
		19.33
Other Receipts		
Agriculture: Fees, Rent, Farm, Receipts etc.	110.62	
Veterinary: -do-	23.39	
Fisheriss: Fees and other receipts	0.57	
Other deposits including Loans and Advances	59 01	
State Govt. Loan for House Building Advance	15.00	
		208.59
Total		1410 82

Expenditure : (Rs. in lakhs)

	Details	Amount
1	University Administration	52.02
2	Estate Office	23.03
3	Capital Works	17.44
4	Agrl. College and Res. Instt., Coimbatore	71.51
5	Faculty of Horticulture -do-	18.30
6	School of Genetics, Coimbatore	29.16
7	Post-Graduate Studies Coimbatore	4.71
8	Centre for Agrl. And Rural Development Studies, CBE	8.88
9	Centre for Agrl. Engg., Coimbatore-3	19.22
10	Agrl. College and Res. Instt., Madurai	70.74
11	Agrl. Research Stations and Centres	115.56
12	University Research Schemes	84.92
13	Krishi Vigyan Kendra, Pondicherry	6.49
14	ICAR Schemes including Development Grant	207.39
15	Govt. of India Research Schemes	11.76
16	Outside Agencies Research Schemes	22.43
17	Veterinary College, Madras	137.09
18	Veterinary Research Stations, Centres and Schemes	84.93
19	Fisheries College, Tuticorin	40.99
20	TNAU Employees Pension Fund	15.00
21	Loans and Advances and Deposit Transactions etc.	54.55
22	House Building Advance Account	15.00
	Total	1111.12
	Closing Balance as on 31-3-83	299 70
	Grand Total	1410.82

The Finance Committee considered the proposals for the Revised Estimate for 1982-83 and Budget Estimate for 1983-84 of the University and recommended the estimates to the Board of Management. The Annual Audited Accounts for the year 1981-82 has already been finalised and will be placed before the Board of Management. As the audit of accounts for 1982-83 has not been completed, the accounts for 1982-83 have not been finalised and the accounts now furnished are subject to audit.

5. Prof. R. K. Sivanappan
Dean
College of Agrl. Engineering.

6. Dr. S. Muthuswamy
Dean (Horticulture)

7. Dr. A. John Knight
Director of Extension-Education.

8. Dr. S. Venkatayan
Director of Research (Ani. Science)

9. Dr. V. Rajagopalan
Director, CARDS

10. Dr. S.R. Sree Rangasamy
Director, School of Genetics

11. Dr. K. K. Krishnamoorthy
Dean, Agrl. College & Res. Instt.
Madurai

12. Dr. P. Kothandaraman
Dean
Veterinary College
Madras

13. Dr. M. D. K. Kuthalingam
Dean
Fisheries College
Tuticorin

14. Dr. M. Balasubramanian
Director of Research (Agri.) -
Member Secretary

Heads of Departments

1. Dr. T. Kumaraswamy
Prof and Head, Department of
Agrl. Entomology, Coimbatore

2. Dr. M.P. Arumugam
Prof. of Extension
Madras Veterinary College

3. Dr. P.K. Aiyasamy
Prof and Head, Department of Agrl.
Economics, Coimbatore

4. Tmt. Dr. C M. Lalitha
Prof and Head, Dept. of Parasitology
Madras Veterinary College

5. Dr. N. Shanmugham
Prof and Head, Dept. of Plant Pathology
Coimbatore

Outside Agencies Contributions :

The following outside agencies have come forward to contribute funds as indicated hereunder :

Name of Agencies :	Name of the Research Project
SIMA-Cotton Development and Research Association, Coimbatore	Scheme for Evolution of Early Maturing High Yielding Medium Staple Variety of Cotton.
Tamil Nadu Khadi and Village Industries Board, Madras	Scheme for Research Work on Preserving Neera and Improving Flavour and Keeping Quality of Jaggery.
Ford Foundation, U.S.A.	Scheme for Training Women in Enterprise Management to Encourage their Participation in Rural Development.
State Agrl. Marketing Board, Madras	Scheme for Institution of Action in Agrl. Marketing and Creation of a Wing for Agrl. Marketing Management.

Scholarship :

The following scholarships have been accepted :

Aspee Agrl. Research and Dev. Foundation, Bombay.	Rs. 7,200/-	Rs. 300/- p.m. for a period of two years to Entomology Students.

Prizes and Medals :

The following endowments have been made for institution of prizes :

Name of the Donor	Amount	Purpose
M/S. Arooran Sugars Lrd., Vadapathi Mangalam, Tanjore	15,000/-	To award Sri. V. S. Jayaraj Mudaliar Medal to M. Sc (Sugar Production) Student.
Dr. M, N. Kutty	5,000/-	To award Thiru T. Gopalan Nayar Memorial Prize to the Best B. Sc. (Hort.) Student in Fruit Crops.
Dr. Irulappan	5,000/-	To award Dr. C. R. Muthukrishnan Medal to the Best B. Sc. (Hort.) Student in the Horticultural Courses
Thiru Rajasekar, Planter Pattiveerampatti	5,000/-	To award Thiru W. P. A. R. Rajaram Medal to the Best B. Sc. (Hort.) student - overall performance

President South Indian Horticultural Association	5,000/-	To award Medal to the Best B. Sc. (Hort.) Student overall performance
M/S. Indo-American Hybrid Seeds Bangalore	5,000/-	To award Medal to the Best B. Sc. (Hort.) Student in Floriculture
M/S. Premier Irrigation Equipment Ltd., Coimbatore	5,000/-	To award Medal to the Best B. Sc. (Hort.) Student in Vegetable Crops

Grants - in - Aid by the University

Grants or subscriptions were paid to the following institutions:

Inter - University Sports Board	Rs. 2,000/-
Ladies Club, Madurai	460/-
Staff Club, Madurai	500/-
Staff Club, Coimbatore	5,000/-
MASU	7,000/-
Students' Club, Madurai	3,640/-
Indian Agrl. University Association	3,000/-
Students Union, A. C. & R. I., Madurai	3,765/-
Staff Club., A. C. & R. I., Coimbatore	3,500/-
Madras Vety. College Students' Association	5,000/-
South Indian Horticultural Association	5,000/-
Total	38,865/-

University Budget Estimate for 1983-84

The annual financial estimate of the University has been approved by the Finance Committee/Board of Management for a gross appropriation of Rs 1596.60 lakhs (including ICAR., GOI. and other agencies schemes)

A sum of Rs. 946.84 lakhs is expected as grant from the State Government to the University for the year 1983-84 for implementing various education, research and extension programmes. Grants from ICAR., will be about Rs. 405 14 lakhs including ICAR Development Grant and implementing NARP. Centres. Grant of Rs. 18 60 lakhs is expected from Govt. of India and Rs. 23 57 lakhs from Other Agencies. Further the University receipts will be in the order of Rs. 132 30 lakhs approximately.

Audit

The Audit Certificates for 1980-81 have been sent to the ICAR and Govt. of India for almost all the schemes sponsored by them. The audit of General Fund Accounts of the University upto 1981 82 has been completed. The general view of the audit is highly satisfactory.

Civil Works

TNAU, Coimbatore

An additional kitchen to the existing dining hall in Engineering College Hostel. Community hall. Tufflight glass house.

H.R.S. Periyakulam

First floor to office building.

Veterinary College, Madras

Airconditioning of the Swaraja Hall.

Livestock Research Station, Kattupakkam

Converting Tansi shed A into cattle shed.

Sheep Breeding Research Station, Sandyanallah

Check dam.

Fisheries College, Tuticorin

1 Staff quarters
2 Administrative building-first floor.

3. EDUCATION

AGRICULTURAL COLLEGE AND RESEARCH INSTITUTE, COIMBATORE

Teaching :

Dr. V. N. Madhava Rao continued to hold the post of Dean (Agriculture) upto 31-12-1982. After his retirement Dr. K. R. Ramaswamy, Professor and Head, Seed Technology was put in full additional charge till 31 3-1983 and on 1-4 1983 he was posted as Dean (Agri.).

Admission :

The College reopened on 1-9-1982 for the second and final year B.Sc. (Ag) students and on 4-10-82 for the third year students. The first year classes commenced on 8-11-1982. The number of students in the first, second, third and final years were 133, 111, 100 and 108 respectively.

Educational Tours :

The third year students went on educational tour from 10-12-1982 to 16-12-1982 and visited Tamil Nadu Rice Research Institute, Aduthurai Sugarcane Research Station, Cuddalore and Cattle Farm at Hosur. The final year students went on tour for 22 days from 20-2-1983. They were taken to I A.R.I., Nuclear Research Laboratory and Water Technology Centre, New Delhi; Punjab Agricultural University, Ludhiana; ICRISAT and Andhra Pradesh Agricultural University, Hyderabad; Indian Institure of Horticultural Research and University of Agricultural Sciences, Bangalore; Arey Milk Colony and Tata Institute of Fundamental Research and Tata Institute of Social Sciences, Bombay.

Scholarships :

The details of scholarships awarded during 1982-83 are given below :

Name of the scholarship	Total No. of Recipients U.G	P.G	Amount Rs.
Backward class	118	10	111165/-
Backward class loan	1	—	500/-
Scheduled class	53	2	—
Scheduled class loan	42	2	37280/-
Gandhi Memorial	2	—	2000/-
Adhoc Merit	15	—	4500/-
National Merit	14	—	19060/-
National Loan	11	1	11640/.
G.O.I. Merit cum means	33	—	60425/-
National Foundation for Teacher's Welfare	1	—	500/-
Ceylon Repatriates	1	—	1080/-
Political sufferer (Pondy State)	1	—	90/-

Amalgamated Funds	7	—	3152/-
Pondy State Scholarship	7	—	15825/-
National Council of Educational and Research Talent	1	—	2700/-
E. I. D. Parry & Co.	3	—	3600/-
TNAU Merit	52	16	135900/-
Research Assistantship	—	3	60000/-
I. C. A. R. Fellowship (Junior)	—	90	@ Rs. 400/p.m.
I. C. A. R. Fellowship (Senior)	—	12	@ Rs 700/p.m.
Agrl. Developmental Council, Thailand	—	1	35000/-
Shaw Wallace	—	1	8000/-
Bank of Baroda	—	1	7200/-
Madras Fertilizers	—	1	7000/-
Alkali Chemicals	—	2	20000/-
Voltas	—	1	11000/-
Indofil	—	1	1 600/-
Bayer & Co.	—	2	23200/-
Senior Fellowship under improvement of Teaching Faculty competence scheme	—	1	10350/-
M/S. Coromandal Indag Products (P) Ltd., Madras	—	1	11600/-
Ford Foundation	—	1	4800/-
State Scholarship for the children of school teachers	—	1	550/-
General Cultural Scholarship (Thailand)	1	—	5133/-
Andaman Nicobar Islands Scholarship	4	—	3675/-
S.J. Indal Trust Scholarship	1	—	600/-
Indian Air Force Benevolent Association	1	—	1000/-
Govt. of Nagaland Directorate of Agri, Kohima	1	—	3930/-

Students' Hostel :

Dr. P. K. Aiyasamy, Professor and Head of the Department of Agricultural Economics, continued as Warden. The following staff functioned as Deputy Wardens :

Dr. P. C. Sundara Babu	—	Accounts
Dr. M. Thangaraj	—	Messes

The Deputy Wardens Thiru K. S. Jahangir and Thiru R. Nethaji Seetharaman were relieved at the end of their terms and the following staff were appointed as Deputy Wardens :

Dr. K. K. Mathan	—	Stores from 16 4-82 F. N.
Th. M Swamiappan	—	Canteen from 5-5 82 F. N.

Thiru C. M. Bhakathavatsalu, Assoc. Professor (Horticulture) got relieved from the post of Deputy Warden (Women's Hostel) after his tenure was over. The Warden continued to be incharge of Womens' Hostel.

Eight hundred and seven students, inclusive of 200 girls were accommodated in the various hostels. Their distribution in the various hostels is as follows :

Year	Hostel	No. of rooms	No. of imates
MEN :			
I B Sc (Ag.) & (Hort.)	Old Hostel	26	76
II -do-	PPC Hostel	40	120
III -do-	Tamilagam	39	78
IV -do-	Tamilagam	51	102
Diploma course in Sericulture	PPC Hostel	13	38
I M Sc. (Ag.)	P.G Hostel	78	78
II M.Sc. (Ag.)	P.G Hostel	115	115
WOMAN :			
III & IV B.Sc. (Ag) and (Hort.)	New Hostel	24	72

The remaining 128 girl students were accommodated in 3 bungalows and 3 P type quarters.

Health Care :

The University Medical Officer provided health care to the students.

Students' Mess :

Totally seven messes were functioning as in the previous years. The groceries were purchased from Co-operative Super Market and Urban Co-operative stores till May 1982. From June 1982 onwards the groceries were purchased from TNAU Employees' Co-operative Stores in the campus. The Coimbatore Milk Producers Union supplied milk. The controlled commodities like sugar, maida, suji were purchased from the Civil Supplies Corporation, Coimbatore. Rice was purchased from the wholesale rice dealers. The fuel gas supply was made by Super Market.

The Students' representatives managed the messes efficiently. Mess representatives' meetings were held regularly.

Students' Canteen :

The students' canteen catered to the needs of students for stationery, cosmetics, coffee, tea and snacks. The extension counter of the Students' Canteen at Womens' Hostel served the needs of the girl students.

Entertainments for Students :

Forty four feature films were screened in the Anna Auditorium.

Students' Club Activities :

Under the auspices of Hiking Society, cycles were distributed to the members on 24-5-1982 by the Vice-Chancellor.

Inter-Class Dramatic competition was conducted from 24-5-1983 to 26-5-1983. The final year students won the first place.

"Muthamizh Vizha" was celebrated for three days from 5-6-1982. Famous writers and orators of the State participated.

Under the auspices of Arts and Photograpic Society painting, drawing and photographic competitions were conducted on 27-6-1982.

Club Day was celebrated on 3-7-1982. Hon'ble Minister for Agriculture Dr. K. Kalimuthu was the Cheif guest.

The office bearers of the Club were elected on 14 9-1982. Thiruvalargal A. Subramaniam, IV B. Sc. (Ag.) and A. Valluvan, IV B. Sc. (Hort.) were elected Club Secretary and Games Secretary respectively Secretaries for the various societies were also elected.

Sports and games:

Kalaimani memorial foot ball tournament for Coimbatore district education institutions was conducted from 5-4-1982 to 7 4-1982 at Coimbatore. The Dean (Agri.) inaugurated the tournaments. Government Arts College, Coimbatore and Tamil Nadu Agr'. University, Coimbatore were winners and runners up respectively.

TNAU Main campus cricket team participated in Santosh trophy Cricket tournament conducted by Mansfield Cricket Club on 9-5-1982 and won over the Sansan Cricket in the first round.

TNAU foot-ball teams participated in the inter-university tournament held at Trichur on 3-10 1982.

TNAU hockey and besket ball teams participated in the inter-university tournaments held at Osmania University, Hyderabad and Annamalai University Annamalainagar respectively.

The Vice-Chancellor trophy hockey tournament for Coimbatore District was conducted from 16-2-1983 to 19-2-83 The Dean (Agri.) inaugurated. Dean(Hort.) distributed the prizes.

TNAU ball badminton team participated in the inter-university tournament held at Madras University on 26-2-83.

The Coimbatore inter-collegiate sports meet was held for two days from 1-3-1983. The Dean (Agri.) took the salute of the atheletic marchpast and declared the sport meet open. The Dean (Hort.) distributed the prizes. Dr G. Devarajulu, Principal, Government Arts College, Coimbatore presided.

National Cadet Corps:

The NCC activities commenced on 5 7-1982. In addition to normal drill practices, bayonet fighting, weapon training etc. were organised.

The regular army attachment camp was held from 23 6-82 to 13 7-1982 at Madras Regiment I Centre, Wellington, CUO. G. Rajendran attended the camp.

A cadre camp was organised for a period of 10 days at the Unit Head Quarters, Thomas Park, Race Course Road, Coimbatore. Twenty five cadets of the University participated in this programme.

SGTR. Vijyaraghavan was selected to participate in the NCC Day celebrations held on 28-2-1983 at PRC grounds, Coimbatore.

Eighteen cadets were presented for the 'C' certificate examination on 4—3—1983 and nine cadets for the 'B' certificate examination on 11-3-1983

National Service Scheme

The NSS had 100 boys and 100 girls as members Thiru P. Gnanamoorthy, Assistant Professor of Agronomy continued to be the

Dr. V. Rajagopalan, Director CARDS, Lighting the Olympic Torch on Sports Day, June 1 , 1982

Dr. C. R. Muthukrishnan, Dean (Horticulture) as Chief Guest Introduced
to the players of Vice-Chancellor's Cup Hockey Tournament

Hon'ble Minister for Agriculture Dr. K. Kalimuthu releases "Pani Malar",
Dec 28, 1982

Kalaimani Memorial Foot Ball Tournament, Feb 12, 1983
The Vice-Chancellor Presents the Trophy

Tractor Training to the Students of College of Agricultural Engineering

Inauguration of Kalaimagal Kazhagam at Madras Veterinary College
on June 8, 1982

Programme Officer. Thiru A. Venkataraman III B.Sc. (Ag.) was the Secretary.

The volunteers organized Farmers' Day on 24-1-1983 They took the farmers around the various departments and explained the latest achievements in each discipline. They also helped in organising Independance Day, Republic Day and Inter - Collegiate Athletic Meet and other functions.

About 2500 *Eucalyptus* and *Casurina* seedlings were planted by the NSS voluntears in the campus. The volunteers cleared parthenium weeds on both sides of the Coimbatore-Maruthamalai Road.

The volunteers attended two eco-development campaigns at Ootacamund. They also formed bunch terraces in the hills.

Faculty of Horticulture

The Faculty of Horticulture continued to offer B.Sc. (Hort.) degree programme besides courses in horticulture for B.Sc. (Ag.) and B.E. (Ag.) students. Dr. C.R. Muthukrishnan continued to be the Dean. This faculty also offered post-graduate courses for M.Sc (Ag.) and Ph D. degrees.

Admission

Forty students were admitted to the I B Sc. (Hort.) course, 14 for M Sc. in Horticulture and five for Ph.D. programme. There were 12 M Sc (Hort.) and nine Ph.D senior students. The Strength of II, III and IV B.Sc. (Hort.) classes were 32, 34 and 38 respectively. The first B.Sc. (Hort.) course commenced in September, 1982.

Educational Tours

The final B.Sc. (Hort.) students went on All India Tour from 16-2-1983 to 13-3-1983 to Bangalore, Madras, Bombay, Hyderabad, Agra, Delhi, Ludhyana, Chandigar etc., and visited the Research Stations, Agricultural Universities and Gardens. They also went on a tour to Kodalkanal, Thadiyankudisai, Madurai, Vridhachalam and Kanyakumari to study the plantation crops like wattles, eucalyotus, cinchona, cashew, rubber and oil palm. The third year students went on optional tour for studying pomology.

Training Programme :

The third year students were given a practical training in coffee cultivation at Yercaud from 18-11-1982 to 22-11-1982; tea cultivation at UPASI (Anamalai) from 22 11 82 to 30-11-82 and about plantation crops at Thadiyankudisai from 26-12-82 to 30 12-82.

Scholarship :

The following scholarships were availed of by the students :

Name of Scholarship	Under graduate	Post graduate
Backward classes scholarship	30	—
Scheduled castes scholarship	11	—
National loan scholarship	1	—
TNAU merit scholarship	6	—
ICAR fellowship	11	12
ICAR merit scholarship (Ph.D)	—	2
	59	14

Special Lectures :

The following special lectures were arranged for the benefit of students and staff members :

Dr. Rajasekaran, University of Sydney on "Genetic Engineering of Fruit Crops" and "Tissue Culture".

Dr. S. Shanmughasundaram, Asian Vegetable Research Centre, Taiwan, China on "Recent Trends in Soyabean and Vegetable Crops like Tomato".

FACULTY OF AGRICULTURAL ENGINEERING

Admission :

Seventy five students were admitted to the I BE (Ag.) progrmme. The first trimester for the first year students commenced on 8-11-1982. The first trimester for IV and V BE (Ag.) programmes started on 23-8-1982 and that for II and III BE (Ag.) programmes commenced on 15-12-1982. The strengths of the corresponding classes respectively were 81, 48, 47, 41 and 47. Seventeen scholars were doing their post graduate programme.

Examination :

The fourth and fifth supplementary examinations were conducted during July, 1982 and February, 1983 respectively. Regular tests and examinations were held as per the regulations of the trimester system of teaching.

Practical Training :

The IV BE (Ag.) students were on a practical training from 8-7-1982 to 31-7 1982 in the following organisations :

i P.S.G. Industrial Institute, Coimbatore.

ii Government Tractor Workshop, Coimbatore

iii Office of fhe Assistant Executive Engineer, (Soil Conservation), Coimbatore

v Office of the Assistant Engineer (SCS including RVP and Indo-German Project), Ooty.

Educational Tour

The final BE (Ag.) students were taken on an All-India Study Tour from 3-3-1983 to 24-3—1983 and they visited the following industries/institutions.

Bangalore

i) Vicon Limited.
ii) VST Power Tillers & Tractors.
iii) National Seeds Corporation.
iv) Visweswaraiya Technical Museum.

Bombay

v) Indian Institute of Technology
vi) American Spring Company
vii) Aarey Milk Company

New Delhi

viii) IARI
ix) WTC
x) Escorts Ltd , Faridabad, Ludhiana
xi) Punjab Agrl. University
xii) Friends Foundary

Hyderabad

xiii) Andhra Pradesh Agrl. University
xiv) Central Plant Protection Training Institute
xv) ICRISAT

Scholarships

The following scholarships were availed of by the students.

Details of Scholarship	I	II	III	IV	V	Total
Scheduled Caste Scholarship	12	5	3	5	2	27
Backward Classes Scholarship	16	10	7	9	9	51
Ex-Servicemen Welfare Scholarship	—	—	—	1	—	1
National Merit Scholarship	—	—	—	1	5	6
TNAU Merit Scholarship	4	4	3	2	2	15
Nagaland Govt. Stipend	—	—	—	—	1	1
Pondicherry Govt. Scholarship	—	—	—	1	—	1
ICAR Merit Scholarship	—	—	—	4	4	8
Andhra Pradesh Govt. Scholarship	—	1	—	—	—	1
National Loan Scholarship	—	—	1	3	—	4
NCERT Scholarship	1	—	—	—	—	1
Ad-hoc Merit Grant to S. C students	5	—	—	—	—	5

Students Hostel

Two hundred and forty eight students stayed in the hostel. A New kitchen was constructed with gas connection. The carrum and chess indoor games rooms were provided with components. Three cement benches were erected at the Roman ring ground. One water tank was provided for the mess.

NCC

The NCC activities commenced on 5-7-1982. In addition to normal drill practice, bayonet fighting, weapon training etc. were organised for the Cadets The Regular army attachment camp was held from 23-6-1982 to 13-7-1982 at Madras Regimental Centre, Wellington. A cadet camp was organised for the cadets for 10 days at the group head quarters situated at Thomas Park. Race Course Twenty five cadets of the company availed of the training.

SGT R. Vijayaraghavan was Selected to participate in the NCC day celebrations held at PRC Grounds, Coimbatore. Eighteen cadets were presented for the C-Certificate examination on 4 3-1983 and 9 for B-Certificate examination on 11 3-1983. CUO G Rajendran was selected for "The VAYU SAINIK CAMP" to be held at Secunderabad from 15-6-1983 to 28-6-1983. L/CPL M. S. Ramesh was chosen for the army attachment camp to be held at MRC, Wellington during June, 1983.

NSS

A total of 93 students were admitted to the NSS programme. The following items of work were attended to by the volunteers

i Tree planting at College of Agrl. Engineering Hostel.

ii Cleaning the hostel campus.

iii Digging and transporting sand and jalli and compacting, rolling etc. laying badminton volleyball court in the hostel, premises

iv One day camp at Vellalore for cleaning and eradication of parthenium etc. at the Hospital, Library and School for Aged run by Round Table.

v Sixty volunteers from different educational institutions attended the special coaching camp at Ooty from 27-12-1982 to 31-12-1982 and 10 of them were from the College of Agrl. Engineering. In the special camp a socio-economic survey of Ootacamund covering 900 families was conducted.

AGRL. COLLEGE AND RESEARCH INSTITUTE, MADURAI

The number of students on roll was as follows :

I B.Sc. (H.Sc.)	19
II B.Sc. (H.Sc.)	10
III B.Sc. (H.Sc.)	15
I B.Sc. (Ag.)	180
II B.Sc. (Ag.)	64
III B.Sc. (Ag.)	77
IV B.Sc. (Ag.)	89
I M.Sc. (Ag.)	65
II M.Sc. (Ag.)	63
Total	510

Educational Tours :

The third B.Sc. (Ag.) students were taken on tours to the Agrl. Experimen Stations at Vedasandur, Aliyarnagar Coimbatore, Mettupalayam, Ooty, Bhavanisagar, Virudhachalam, Aduthurai, Trichy and Pudukkottai from 21-2-83 to 28-2-1983.

The final B.Sc. (Ag.) students numbering 88 along with three staff members were on an All-India tour from 11-2-83 to 4-3-83 and visited Madaras Veterinary College various Agricultural Universities and research centres at Hyderabad, Bombay, New Delhi Calcutta and Bhubaneshwar.

Scholarships :

Details	UG	PG	Total
Scheduled Caste Scholarship	60	2	62
Backward Classes Scholarship	103	8	111
Agrimerit Scholarship	25	16	41
ICAR Merit Scholarship	30	—	30
ICAR Junior Fellowship	—	24	24
National Merit Scholar	7	—	7
Ford Foundation Scholarship	—	1	1
National Loan Scholarship	4	—	4
Pondicherry State Scholarship	...	2	2
National Foundation for Teacher's Welfare Scholarship	2	...	2
Ex-Servicemen Scholarships	4	...	4
Adhoc Merit Scholarship	12	...	12
Aspee Foundation Scholarship	...	1	1
AMM Arunachalam Shastiabthapoorthi, Scholarship	1	...	1
Award of Bright Students Scholarship	...	1	1
State Scholarship	1	...	1
Scheduled Caste Loan Scholarship	63	2	65
	312	57	369

Results

The following Students passed out during the period under report

B.Sc. (Ag.)	;	58
M.Sc. (Ag.)	:	61

Students Hostel

Dr. A. Kandaswamy, Professor and Head, Department of Agrl. Economics was the Warden. He was assisted by the Deputy Wardens, Dr. A. Rajamannar, Associate Professor of Soil Science and Agrl. Chemistry and Thiru S. Sadayappan, Associate Professor of Agronomy for the period from 1-4—1982 to 31—10—1982 and Dr. S. Rajasekaran, Associate Professor of Agrl. Botany for the period from 1-11-1982 and Tmt. A. Susheela Thirumaran, Associate Professor of Home Science.

There were 443 students in the hostel. Adequate medical facilities were provided by a full time medical officer.

National Service Scheme

The enrolment was 128. Dr. K.K Krishnamoorthy, Dean continued to be the Chairman and Thiru S.D. Sundersingh, Assistant Professor (Agronomy) continued to act as Programme Officer till 21—2—1983. Thiru L. R. Rajasekaran, Assistant Professor (Hort.) was Programme Officer from 21-2-1982. The advisory Committee of the Scheme is as follows;

Dr. K.K. Krishnamoorthy, Dean — Chairman

Members

1 Thiru L.R. Rajasekaran, Programme Officer
2 Prof. K. Radhakrishna Menon, Professor and Head, Department of Agrl. Extension
3 Thiru A. Duraisamy, Junior Accounts Officer
4 Thiru Dhanasekaran, IV B.Sc. (Ag.), Secretary

The following programmes were organised during the year :-

1 Levelling the floor of the PRC bus shelter near the western side gate of the campus.

2 Blood donation campaigns.

3 Screening of a feature film for the inmates of the leprasorium at Pudupatti.

4 Adult education in Malayalathanpatti village.

5 Night school for the children of *Malayalathanpatti village.*

6 Annual special camp at A. Pudur village from 20-6-1982 to 25-6-1982.

7 Cleaning the premises of the campus by shramdhan.

8 Volunteers' participation in Farmer's Day.

9 Laying tracts for the Sports Day.

10 Lime washing of trees in the campus.

11 Traffic regulation in the city.

National Cadets Corps :

Forty five cadets were entrolled from II and III B. Sc. (Ag) Classes. The cadets were given training in foot drill, arms drill, weapon training, feld craft, map reading, first aid and civil defende in 40 parades of two hours duration each. The Annual Training Camp was held from 24th December to 4th January 1983 at Christian College,

Marthandam. Ten cadets participated. Eleven cadets appeared for 'B' certificate examination.

Students' Club :

The office bearers of the Student's Club were elected on 3-9-1982 Thiru V. Kandaswamy, IV B. Sc. (Ag.) was elected the Club Secretary and K. Senthilkumar, IV B Sc. (Ag) the Games Secretary. The Dean continued as the President and Dr. G. Soundarapandian Associate Professor continued as Vice President till November and Dr. A. Rajamannar, Associate Professor acted as Vice-President after November. The Independence Day was celebrated. The Dean, took the salute and delivered the Independence Day Message. The inaugural function of the *Club activities for 1982-83 was held on* 8-9-1982. Major General Nariadar Singh, Director General N. C. C. New Delhi delivered the inaugural address. The Dean presided over the function. The Orientation Day for the freshers was held on 9 11 1982 All the Office bearers of the Students' Club, Rotaract Club, NSS and the Captains of various games wers introduced to the freshers. The Staff members introduced themselves to the new comers, An entertainment programme by freshers and other students was arranged. The Republic Day was celebrated. The Dean, hoisted the national flag and delivered the Republic Day message. Prizes and certificates were distributed to the N. C. C. Cadets by the Chief Guest for their successful training and *certificate tests*.

Orchestra and Musical Club

Thiru M. Premkumar, IV B.Sc. (Ag) was the Secretary. The club took special interest in *entertaining the audience on special* occassions such as religious functions and college functions. The Club also took part in many inter collegiate competitions and the performance was very much appreciated by the city colleges and on many an occasion the participants won prizes for their performance.

Agri-Horti-Society

The Society was placed under the guidance of Dr. K.G. Shanmugavelu, Head of the Department of Horticulture. Thiru C. David Devadoss, III B.Sc. (Ag.) was the Secretary. The members of this Society took keen interest in the 'flower show' conducted by Horticultural Society, Madurai. The society took active part in all college functions. On Farmers' Day the members demonstrated budding, grafing and other propagation techniques.

Dramatic Society

Thiru S. Mohammed Ashraf Ali was the Secretary. The Society took active part in staging entertainment programmes during functions and on special occassions like 'Conferences and Seminars. The first prize in 'one act' drama competition conducted by Madurai Kamaraj University was won by the Society.

Thiru P. Venkatachalapathy of II B.Sc. (Ag.) class won the first prize in the Inter-University Cultural Competition held at Madras for his dance performance. He also got the first place in 'Western dance' conducted by the Jaycee Club of Madurai In the Youth Festival conducted by Madurai Kamaraj University at Melur the members got ten prizes in events like solo and instrumental music, mono acting, K ragam, one act drama and Kathakalachebam.

Hiking Society

Thiru K. Sridhar, III B.Sc. (Ag.) was the Secretary.

Archeological Society

Thiru D. S. Rajavel, III B.Sc. (Ag.) was the Secretary. The inaugural function was held on 7—10—1982. The Dean presided. Dr. K. Rajayyan, Professor and Head, Department of History, Madurai Kamaraj University delivered the inaugural address. The members of the Society visited places of historical importance around Madurai.

Planning Forum

Thiru Jothimuthu was the Chairman and Thiru K. Rajendran III B.Sc. (Ag.) was the Secretary.

Arts & Photographic Society :

Thiru A. S. Krishnamoorthy was the Secretary. The inaugural function was held on 7-10-1982. Thiru Syed Ali Hussaini, Head, Exerkai Karate delivered the inaugural address. The Dean presided. The members took interest in taking photographs during college functions.

Muthamil Vizha :

The Muthamil Vizha for 1982 was celebrated for three days from 20-4-1983.

On 20th, the Muthamil Sudar relay, team headed by Thiru K. Senthilkumar Games Secretary brought the 'sudar' from Meenakshi Amman temple, Madurai.

Debating Society :

Thiru Tomy G. Poovattil IV B Sc. (Ag.) was the Secretary. The inaugural function was held on 23-9-1982. Thiru N. Manimozhian delivered the special address. The Dean presided.

Thiruvalargal Tomy G. Poovattil and C. Thirugnanasambanthan of IV B.Sc. (Ag.) participated in the intercollegiate Tamil Poetry Competition conducted by Vellaichamy Nadar College and Thiru G. Poovattil bagged the first prize. Thiru Tomy G. Poovattil won the second prize in the intercollegiate Essay Competition conducted by the Rotary Club of Madurai District.

A team of Thiruvalargal Ayyapan and Ganapathy of III B.Sc. (Ag.) and Ruguraman of II B.Sc. (Ag.) contested in the Intercollegiate Quiz Competition conducted by the Lions Club of Madurai and won the Rolling Shield. The same team participated in the Quiz competition conducted by the Thiagarajar College of Engineering also and secured the second place. Thiru Ayyapan and Rahuraman also won the Second prize in the Intercollegiate Quiz competition conducted by Fisheries College, Tuticorin.

Students contested in the Intercollegiate competitions conducted by Giants Group of Madurai Thiru Tomy G Poovattil of IV B.Sc. (Ag.) won the first prize in the Tamil Essay contest and Thiru Ravishankar, III B. Sc. (Ag.) secured second place in English Essay contest and Thiru Albert Xavier, III B.Sc. (Ag. bagged the second prize in English oratorial contest. Thiru Tomy G. Poovattil *also won the first prize in the intercollegiate* story writing competition conducted by Thiagarajar Arts College, Madurai.

Thiru M. Selvanayagam, III B. Sc (Ag.) *and Kumarsan, II B. Sc. (Ag.) participated in* the Tamil Oratorical contest conducted by the Agricultural Engineering College, Tamil

Nadu Agricultural University and Thiru M. Selvanayagam secured second place. He also won the first place in the Tamil Nadu oratorical contest conducted by Mu. Va. Mandram. Thiru N. M. Rajendran, III B.Sc. (Ag.) *won the first prize in the Tamil poetry competition* conducted by Dr. Mu. Va. Mandram.

A literary discussion group called Bharathi Ilakkia Vattam was started with Mr. C. Thirugnanasambanthan, IV. B.Sc (Ag) as Secretary. This group conducted many discussions on the current socially-interesting topics. One of them was the "New Year Thoughts" conducted on 1st January 1983 with the Dean as the chief guest. The members of this group perticipated in the International Bharathi celebrations conducted in Lakshmi Sundaram Hall, Madurai.

Sports and Games:

Thiruvalargal P. L. Arumugam, III B. Sc. (Ag.) K. Rajan, III B. Sc. (Ag.), P. Anandan, II B. Sc. (Ag) were selected to represent the University Hockey Team in the South Zone Inter University Tournament held at Osmania University, Hyderabad. The team also participated in the Israele Memorial Hockey Tournament conducted by the Madurai Medical College, Railway Institute First Knockout Hockey Tournmentand Madurai District League Tournament. Thiru K Rajan of III B .Sc. (Ag.) was selected to represent Madurai District Hockey team in the Inter-District Hockey Tournament.

Thiruvalargal S. Pandithurai, IV B. Sc. (Ag), K Rajan. III B Sc. (Ag.) and P. Pandian, II B. Sc. (Ag.) were selceted to represent the University Foot Ball Team which participated in the Inter University (South Zone) Foot Ball Tournament held at Trivandrum. The College Team participated in the Lions Club of Madurai Pandian Basket Ball Tournament and Kalaithanthai Karumuthu Thiagarajan Chettiar Memorial tournament held at Thiagarajar College Madurai. Thiru K. Balakrishnan of B. Sc. (Ag.) *attended the* selection trials for University Team at Coimbatore. The College team took part in the Dr. Rajagopalan Valley Ball Tournament held at Madurai Medical College and also in the Lions Club of Madurai Pandian and Thiagaraja Chettiar Memorial Volley Ball tournaments. The College team entered in the Madurai District Association League Tournaments (Criket) and performed creditably during the season with four winnings. Thiruvalargal P. Prabhakaran (II P. G.) and T. Srinivasan III B. Sc. (Ag.) were in the University Team which participated in the Inter-University South Zone criket Tournament held at Trichirapalli.

Thiru P. Palanikumar, II M.Sc. (Ag). was selected to represent the University in the Inter-University Ball Badminton Tournament held at Madras.

The tennis team participated in the Kalaithanthai Karumuthu Thiagarajar Chettiar Memorial Tournament held at Thiagarajar College, Madurai.

The Cross country race around the 'Yanamalai' attracted 45 participants this year.

Sports Day:

The 18th Annual Sports Meet was held on 30-3-1983. The Dean took the salute and declared the Sports Meet Open. Thiru G. Veeraraghavan, I.P.S., Deputy Inspector General of Police presided and Tmt. Prema Veeraraghavan distributed the prizes to the winners. Thiru K. Rajan, III B.Sc. (Ag.) won the individual championshop for men and

Miss Darley Jose, I M. Sc. (Ag.) claimed the individual championshop for women. The overall athletic championship for men was won by III B.Sc. (Ag.) class and the yellow house won the women championship. Thiru P. Anandan, II B.Sc. (Ag.) set up a new record in polevault event.

MADRAS VETERINARY COLLEGE, MADRAS

Admission :

	B. V. Sc.	M. V. Sc.	Ph. D
No. of students admitted	116	43	11

Date of commencement of the acadamic year 1982-83	I B. V. Sc.	17-11-1982
	II B. V. Sc. III B. V. Sc.	
	IV B. V. Sc. V B. V. Sc.	27-12-1982
	M. V. Sc.	17-11-1982
	Ph. D.	28-2-1983

Scholarships :

Name of scholarship	No. of recipients	Amount Rs.
Adi Dravida & Tribal Welfare Scholarship	101	245639
Adi Dravida & Tribal Welfare Loan Scholarship	82	90180
Backward Class Scholarship	142	132196
Backward Class Loan Scholarship	3	2500
Ad Hoc Merit Grant for Scheduled Caste Students	16	4800
Bright Student Award for Scheduled Caste Students	3	2880
National Merit Scholarship	6	13,290
National Loan Scholarship	14	13,180
Ex-Servicemen Scholarship	2	1,964
ICAR Merit Scholarship	44	66,125
State Scholarship for Children of School Teachers	1	675
National Foundation for Teachers Welfare Scholarship	7	4,000
Merit-cum-Means Award for Scheduled Caste Students	2	4,500
TNAU Merit Scholarship	4	4,000
TNAU SC/ST Scholarship	5	5,000
Pondicherry State Post-Matric Scholarship	2	7,996

Jammu & Kashmir Loan Scholarship	3	8,630
Government of India Cultural Scholarship	2	15,182
Megalaya Scholarship	3	9,000
Andaman & Nicobar Scholarship	3	5,125
Ford Foundation Scholarship for Women Students	1	4,800
TNAU Merit Scholarship for P.G. Students	8	17,600
Total	454	6,59,262

Students' Hostel

Warden

Dr. R. Ramamurthy, M.V.Sc.
Professor & Head,
Department of Meats

The Warden was assisted by three Deputy Wardens. The activities of the hostel were carried out with the assistance of the student Office bearers elected by the students themselves at the begining of the year.

Health Care

The Hygiene Secretary was in overall charge of the health aspects of the inmates. Periodical spraying of insecticides was done insecticides was done inside and outside the rooms in the hostel to prevent mosquito menace. An authorised registered medical practioner Dr. C.J. Nagarajan was attending on the students twice a week.

Students' Mess

Two messes were functioning. The messes were run by the inmates themselves on dividing system under the supervision of the Warden. Improvements to the messes were made by purchasing one sterilizer and two gaizers for the sterilisation of utensils and also to prepare boiled water.

Entertainment for Students:

Fifty Six playing records were purchased. Recorded music was amplified inside the mess hall and in the lawns of the various blocks through a net work of loudspeakers. The television set was used to provide entertainment. During weekend feature film were screened in the open air Twenty films were screened during the year.

Students' Club Activities:

The students took part in oratorial contests conducted by various institutions in the city. Messrs. Venugopalan, Rajasekaran and Waswaran took part in many contests The lady students participated in many inter-collegiate debates, quiz programmes and seminars.

In the cattle judging competition arranged by the All-India Livestock and Poultry Show Committee at Allahabad on 3-3-1983 MVC students came out suceessful. A Science Club was started this year.

Sports & Games:

By nomination, Dr. P. Mahalingam, Professor & Head, Department of Animal Disease Investigation & Control, and Thiru A. Marimuthu, final B. V. Sc. functioned respectively as Sports Secretary and Student Secretary.

The basket ball, ball-badminton, foot ball, hockey, table tennis and volley ball teams participated in the Stenley Medical College Sports Festival.

The hockey and ball-badminton teams performed creditably in the one day tournaments organised by the Sports Club, Ambattur and Madras Institute of Technology, *Chromepet, respectively.*

The staff vs students matches in cricket, foot ball, table tennis and ball badminton were organised. In the Inter-collegiate staff tournament conducted by Viveganánda College Staff Sports Club during January 1983 MVC *staff came runners-up* both in table tennis singles and doubles.

The faculty's share in the TNAU teams was also commendable with 23 players representing the University in various games and sports.

Thiru D. Sundararaj, Phsical Director, acted as Manager for the TNAU cricket and hockey teams in the inter-university tournaments respectively held at Trichy and Hyderabad.

The annual sports meet was conducted on 15-2-1983. Prizes and certificates were distributed on the College Day on 18-2-1983.

The fifth B. V. Sc. class bagged both, Dr. K. S. Nair Trophy and May & Baker Trophy in the inter-class games championship and sports championship Thiru K. Matheeswaran of first B. V. Sc. secured the trophy donated by Dr. Manthiramurthy for the individual men championship and Selvi Mala S. Prohit of fourth B. V. Sc. got the individual women championship.

Thiru J. S. Uthayakumar of fifth B. V. Sc. was awarded the trophy for the best sportsman of the year.

The Madras Veterinary College Sports Festival was held in February, 1983 Altogether 17 colleges took part in the *festival.*

National Cadet Corps :

The number on role was 50, out of which 28 were enrolled from the first year. The oath taking parade was conducted on 2-9-1982 and the Company Commander administered the oath to the cadets. The following were the important events.

Eight cadets attended the combined annual training camp at Kancheepuram for 12 days, 5 cadets attended the army attachment Camp at M. R. C., Wellington and 7 and 12 cadets attended respectively the "C" certificate the "B" certificate examinations. The results of the examinations conducted during last year showed 85% and 93% success in "C" and "B" certificate examina*tions respectively. In October,* 1982 the cadets went on a cycle expedition to Kovalam Beach and a running expedition to Golden Beach. *On the Republic Day Dean* took *the salute. The Senior Under Officer* Thiru M. S. Muralidharan was sent for the selection of cadets to represent Tamil Nadu in the Republic Day Parade at New Delhi.

National Service Scheme :

The student strength was 100. The NSS Advisory Committee consisted of the following members :

Dr. V. M. Ramaswamy	:	Dean & Chairman
Dr. P. Kothandaraman	:	Professor of Poultry Science
Dr. T. G. Abdul Khader	:	Professor of Preventive Medicine
Dr. M. P. Arumugam	:	Professor of Extension
Dr. T. M. Thangaraj	:	Professor of Clinics
Thiru D. Sundararaj	:	Physical Director
Dr. M. Mahadevan Pillai	:	Programme Officer
Thiru N. Rajasekaran	:	Student Leader.

Hasthinapuram village of Chengleput district continued to be the adopted village. The members visited the Village, once in a week and carried out the following items of Social Service.

Ranikhet disease vaccination, Pigean pox vaccination, Fowl pox vaccination and Debeating of farmers' fowls and Rinderpest disease vaccination of farmers' cattle.

A special camp of 10 days duration from 31-3-1983 to 9-4-1983 was conducted at the Livestock Research Station, Kattupakkam. Thirty five volunteers and three village youths were involved in the camp.

The following social service activities were carried out in the villages surrounding Livestock Research Station, Kattupakkam namely Konar, Pothery, Pothery Colony and Kattankolathur. Movies on social improvement and animal husbandry practices-Rinderpest vaccination of farmers' cattle Ranikhet vaccination of farmers fowls planting of Koobabul saplings at the farmers' holdings.

The student members offered their "shramdhan" in levelling the approach Road to the Livestock Research Station, Kattupakkam.

FACULTY OF FISHERY SCIENCE, TUTICORIN

Admission :

Twenty and four students were admitted respectively in the first year B. F. Sc. and M. F. Sc. Programmes at the Fisheries College, Tuticorin. The first trimester for the first year B. F. Sc. programme started on 8-11-1982 and the same for M. F. Sc. programme started on 8-11-1982 and the same for M F.Sc. commenced on 17-11-1982.

Examination :

Apart from regular test and examinations under the trimester system, a supplementary examination was conducted during August 1982 for the benefit of students having a large number of course arrears.

Practical training :

Practical training in aquaculture was given to the participants of the Fish Farmers Development Agency and M. Sc. students of Holy Cross College, Nagercoil, New College, Madras and St Xaviers College, Palayamkottai.

Educational Tours :

The fourth year B. F. Sc. students went on an All India tour for 20 days to Visaka-

patinam, Culcutta, Bombay Goa, Mangalore and Cochin. The students visited the Exploratory Fishery Project, the Fishing Harbour, the plants of the Andhra Pradesh Fisheries Corporation and some establishments of the State Department of Fisheries at Visakapattinam, inland fish culture at Calcutta Export Inspection Agency and the Headquarters of the Central Inland Fishery Research Institute at Barrackpore. At Bombay they visited the CIFE, Taraporewala Acquarium, and the *processing establishment of* Exploratory Fishery Project. At Goa they visited the National Institute of Oceanography. They also visited the Fisheries College at Mangalore. Concluding their tour at Cochin they visited Central Institute of Fishery Technology, Central Marine Products Export Development Authority. The third year B. F. Sc. Students went on tour for 12 days to the important fishery establishments at Madras, Coimbatore, Uthagamandalam and Bavanisagar.

Scholarships

The details of scholarships given to students are detailed hereunder:-

Name of the Scholarship	No. of Students	Total Amount Rs.
Backward Class Scholarship	16	21,515
Scheduled Caste Scholarship	13	27,668
Schedu ed Class Loan Scholarship	6	7,760
National Scholarship	4	4,620
ICAR merit scholarship	3	5,475
Andaman Scholarship	2	3,000

Students' Hostel

Dr. M D.K. Kuthalingam, Dean was the Warden and Mr. P. Jeyachandran, Assistant Professor functioned as Deputy Warden. There were 79 students residing in the hostel including four M.F.Sc. Students.

Entertainment for Students

Indoor games, radio and T.V. and other recreational facilities were provided in the Hostel.

Sports and Games

The Sports Day was conducted. Thiru. Jawahar Abraham of second B.F.Sc. was the best athelete for the year. He also represented the College in the University foot-ball team. Three friendly volley ball matches were arranged with Spic, Heavy Water Plant and Kamaraj College.

Students Club

The activities of the Students Club were *inaugurated on 15—12—1982 by Thiru.* K. Santhanam, Manager, (Administration & Public Relations), SPIC., Tuticorin.

As part of the Students' Club Activities, a blood donation campaign was organised and 30 students of the college voluntarily donated blood.

An inter-college quiz competion for the colleges in the Madurai - Kamaraj University area, called, 'FIZZOREE' was conducted by the Club on 16–2—1983 under the auspices of its literary wing.

The students of the college participated in various district inter - collegiate extra - curricular activities and won several prizes in (i) Quiz competition (ii) Kavithai (iii) Rangoli (iv) English Elocution and (v) Cultural competition.

Post-Graduate Education

The progress in post-graduate education in the University is given below:

THESES SUBMITTED DURING 1982-83

Department	Master's Degree	Ph. D. Degree
Agronomy	14	10
Plant Breeding & Genetics	4	6
Agrl. Entomology	6	2
Plant Pathology	4	2
Soil Science & Agrl. Chemistry	7	3
Agrl. Economics	14	2
Agrl. Extension	12	1
Seed Technology	9	2
Crop Physiology	—	2
Horticulture	7	3
Sugarcane Production	4	—
Agrl. Microbiology	5	—
Plant Nematology	5	—
Soil & Water Conservation	1	—
Farm Power & Machinery	7	—
Total	99	33

STUDENTS ADMITTED DURING 1982-83

Department	Master's Degree	Ph. D. Degree
Agronomy	20	13
Plant Breeding & Genetics	7	4
Agrl. Entomology	7	4
Plant Pathology	5	4
Soil Science & Agrl. Chemistry	7	6
Agrl. Economics	10	4
Agrl. Marketing Management	5	—
Agrl. Extension	11	2
Seed Technology	5	—
Agrl. Microbiology	10	3

Crop Physiology	5	3
Horticulture	7	5
Food Science & Nutrition	5	—
Sugarcane Production	5	—
Farm Power & Machinery	3	—
Soil & Water Conservation	4	—
Total	166	48

New P.G. Programmes

P.G. Diploma in Plant Protection

The P.G. Diploma in Plant Protection (One year programme) will be started at Coimbatore from 1983-84.

b) P.G. Diploma in Plantation Crops

The P.G. Diploma in Plantation Crops (One year Course) will be conducted at the Horticultural Research Station, Thadiyankudisai from 1983-84.

P.G. School of Plant Protection

The P.G. School of Plant Protection was established on 19—2—1982. The objectives of the School are to have qualified pest management specialists through short term courses on specialised topics and also to *institute one year post-graduate diploma* in plant protection and provide scope for training Laboratory personnel engaged in pesticide formulations and pesticide residues.

Teaching

The following short term courses were conducted during 1982-83.

Course	Period	Participant Attended	Sponsors
Pest management in coconut	15-20 April 1982	18	State Department of Oilseeds.
Pesticide formulations and their use	10-15 May 1982	4	Pesticide industry
Seed and grain health	14-23 June 1982	13	State Dept. of Seed Certification
Biological control of pests of Oilseeds	27-31 July 1982	10	State Dept. of Oilseeds
Integrated pest management in vegetables	9 - 14 August 1982	20	State Dept. of Horticulture and Plantation crops.
Biological control of sugarcane pests	14-18 Sept. 1982	19	State Department of Agriculture

Integrated pest management in oil seed crops	4 - 9 Oct. 1982	7	State Dept. of Oil-seeds
Surveillance and forecasting of pests	1 - 6 Nov. 1982	10 & 9	State Dept. of Agri-culture and Oilseeds
Pest management in fruit and flower crops	13-18 Dec. 1982	5	State Dept. of Horti-culture and Planta-tion Crops
Seed Health	17-22 Jan. 1982	6	State Dept. of Seed Certification
Pesticide formulations and their field use	21-26 Feb. 1983	2	Pesticide Industry
Pest management in field crops	14-19 March 1983	9	Pesticide industry
Pest management in horticultural crops	21-26 March 1983	3	Pesticide industry

Three participative type trainings were also given, on request, as follows:

Pesticide utilization for plant protection	12-14 April 1982	75	Field functionaries of M/s. Shaw Wallace, Madras
Early detection of mango stem borer and its control	27-28 April 1982		Officers of the State Dept. of Horticulture and Plantation crops in Dharmapuri District
Field problems in plant protection in Tamil Nadu	8th Sept. 1982		Field functionaries of M/s. Union Carbide India Ltd., at Coimbatore

Special lectures practicals on pest management in field and horticultural crops, agricultural produce in post-harvest stage, culturing biological control agents, bee keeping, etc., were conducted for the following candidates from various organisations when they visited the P. G. School.

A group of farmers under contac programme in Farm School on AIR, on 6-7th April 1982.

45 field staff from M/S. Cauvery Sugars Pettavaithalai, on 31-10-1982.

2 Assistant Horticultural Officers and one Horticultural Assistant from the Department of Horticulture Karnataka, on 16-10-1982.

48 B. Sc. Zoology students from St. Mercy College, Palghat on 17-11-1982.

4 Probationary Dy. Registrars of the State Co-operative Department' Tamil Nadu, on 6-12-1982.

13 students of Vocational Agricultural Course from CSI school, Ketti, on 21-1-1983.

60 Students of Agricultural School of Sri Ramakrishna Vidyalaya, Perianaickenpalayam, on 21-1-1983.

13 M. Sc. Zoology students from the Kongunadu Arts and Science College, Tudiyalur, on 24-1-1983.

40 B. Sc. Zoology students from Queen Mary's College, Madras, on 10-2-1983.

38 B. Sc. (Ag) students from Agrl. College and Research Institute, Madurai, on 23-2-1983

19 students from Vocational Agricultural School Karaikal, on 2-3-1983.

20 U. G. and P. G students from the Department of Zoology, Government College, Badagara, Kerala on 7-3-1983.

A special lecture on area concept in pest management was delivered by Thiru A. V. Rangarajan, J. D. A. (Research) for fhe benefit of the trainees of the P. G. Diploma course at the CPPTI, Hyderabad, on 5-2-1983

Plant Protection Enquiries:

The following plant protectien enquiries were attended to during the period under report and suitable management practices were suggested.

Green leaf hopper and rice tungro virus on rice-Rats on millets-Wireworm on ragi Shoot borer and internode borer on Sugarcane Earwig on cotton-Mealy bug on coconut Rhinoceros beetle on coconut-Nephantis on coconut-Stem bleeding on coconut-Pestalotia leaf spot on coconut-Red palm weevil on coconut-Biological control of pests on coconut and sunflower-Culturing techniques for parasites of Nephantis-Thrips and mites on groundnut-Leaf miner on citrus-Papilio caterpillar on lime - Fruit borer and ash weevil on brinjal - Leaf hopper and powdery mildew on mango - Stemborer and fruit borer on brinjal - Fruit borer and leaf spot on tomato - Powdery mildery and fruit rot on chillies - Aphid and pod borer on cowpea - Rodents in poultry sheds - Ants on neem tree - Termite on building materials - and Biological control of weeds.

Exhibitions:

Four exhibitions were arranged to highlight the research findings in pest management techniques and the on-going programmes on the following occasions:

Opening of the building of the P. G. School of Plant Protection by Dr. K. Kalimuthu, Hon. Minister for Agriculture, Tamil Nadu and Pro-Chancellor of the TNAU, on 15-6-1982. Visit by the delegates of the XI convention of the Indian Agricultural Universities Association to the TNAU, on 20 9-82. Visit by the candidates participating in the FAO Inter-country Training Programmes in Biological control with special reference to rice on 23-10 1982 and Farmers' Day on 22-1-1983.

UNIVERSITY LIBRARY

Accession :

The Library accessioned 3371 books and back volumes of jonrnals. One hundred and fifty six books were received free of cost.

Of the 1076 periodicals 862 were subscribed. Of these 582 were foreign journals. Twenty journals were received in exchange for Madras Agricultural Journal The Library received 188 free journals.

New Journals :

Thirty four new titles of journals were included in the current list of periodicals.

Library Administration :

The Library Committee of the University met ten times during the year.

Inter-Library Co-operation :

The Library Loan facilities among the Agricultural University Research Institute Libraries and other technical libraries in India and abroad on reciprocal basis.

Technical Processing :

During this year 2076 documents were classified and catalogued and arranged in the stack of the Library. Shelf Register Cards, Subject Cards, Author Cards, Book Cards and Tracing Cards were prepared.

Periodicals :

The Library received 9237 issues of periodicals which were displayed for the use of the readers in the current periodicals display racks. Nearly 1300 back volumes of periodicals were bound and added to the stock of the back volumes section.

Documentation Service :

Research stations were supplied with xerox copies of important current articles through the Director of Research (Agri.). In total, 260 articles were xeroxed and 520 copies were made and distributed.

Circulation :

A total of 40221 pages of xerox copies of scientific articles were prepared for supply to clients.

A total number of 91,938 readers consulted 9,04,415 books and periodicals. The members of the Library 51,231 books

Teaching :

Thirty two classes on library management were conducted for under-graduates and Ph. D. students.

Publications :

Four numbers of READ were brought out. Publication of theses was taken up.

The back files of scientic periodicals in the Library were compiled for computerising by the INSDOC, New Delhi.

4. RESEARCH

The research achievements of the University in the areas of improvement management and protection of crops and post-harvest technology and other related problems are given below

Rice

Crop Improvement

Co. 43 Rice This is a hybrid derivative of a cross between 'Dasal' and IR. 20. It has improved plant type, quality rice, high yield potential coupled with tolerance to alkalinity and salinity conditions. It matures in 135-140 days with a yield potential of 5.5 to 6.0 t/ha.

Ponmani Rice It is a cross between Pankaj and Jagannath with a duration of 160 to 165 days. It is tolerant to RTV and yields 30 to 50% higher than Co 25.

Co. 44 Rice It is a hybrid derivative from the cross combination of ASD. 5 and IR. 20. The range of yield recorded by this new variety is from 3169 to 6453 kg/ha. It has fine grain. This variety is ideally suitable for growing in late samba and thaladi seasons. Co. 44 has field resistance to helminthosporium, BLB and neck blast. It is also tolerant to GM and GLH.

Crop Management

The results of soil test crop response studies indicated that through the adoption of targetted yield approach a sizable saving in chemical fertilizers could be achieved.

Zincated urea application (equivalent to ZnSo4 21. 3 kg/ha) resulted in an increased yield of 52% compared to conventional NPK alone.

Soil amendments studies on non-calcareous moderately saline and sodic soils at Trichy revealed that combined application of gypsum at 4.1 t/ha and leaves of either Casuarina, Vadanarayanan or neem trees at 5 t/ha enhanced the grain yield.

At Madurai, manuring of gypsum upto 0.5 t/ha along with urea increased the productivity of rice.

At Coimbatore and Aduthurai application of urea super granules, sulphur coated urea or granulated compost gave consistently high grain yield.

At Coimbatore growing Azolla along with rice with or without cowdung slurry application resulted in a saving of 30 to 60 kg N/ha. At Madurai application of Azolla at 1 t/ha 1 DAP and incorporating it into the soil at the time of first weeding or, alternatively, application of BGA at 10 kg/ha along with N at 75 kg/ha 7 DAT gave a grain yield obtainable by the application of N at 100 kg/ha. Application of organic manure like poultry manure or pig manure increased the growth of Azolla. Three applications of P_2O_5 at 5 kg/ha at 5 days intervals also increased the growth of Azolla.

At Coimbatore and Aduthurai the herbicide Benthiocarb G 10% (Saturn) at 1 0 kg ai/ha was effective in controlling the weeds.

The cropping systems Rice-Rice-Cotton+ Blackgram; Rice-Rice-Cotton or Rice-Rice-Bhendi that would give highest perhectare income of Rs. 8000/- to Rs. 10,000 may be recommended for Thanjavur delta.

Crop Protection :

Neem oil, seed kernal extract and cake extract were evaluated to be efficient in reducing oviposition, egg hatching and adult longevity of the BPH.

When dust formulations of carbaryl malathion and quinalphos were used on rice crop at 23 and 12 days before harvest, the insecticide residue in the grain and straw was below the tolerance level with reference to carbaryl and malathion.

The predatory potential of spiderlings and spiders on the BPH was investigated. It was observed that even the first instar spiderling was capable of consuming three BPH nymphs/day. An adult spider, on an average, consumed 5-8 BPH nymphs/ day.

In the utilization of light traps in monitoring the rice pest population, the beak period of attraction for rice stem borer, leaf folder and leaf and plant hoppers was found between 8 and 10 p.m., while gall midge was attracted to the light trap between 10 and 12 p.m.

Post-harvest Technology :

The Department of Agricultural Processing has developed a cycle powered winnower and the Mobile Waste Fired Drier which can beused for drying farm produce.

Seed Technology :

Calcium peroxide coating of seeds increased the seedling emergence of IR 50 from 12 to 88%.

Food Science :

At Madurai a method for preparing rice noodles with rehydration ability of 1-1½ min. was developed. Three noodles can be stored for more than two years. Noodles, enriched with soybean and maida with 1/2 to 1 min. rehydration time, can be stored for more than one year.

MILLETS :

Sorghum :

Crop Management :

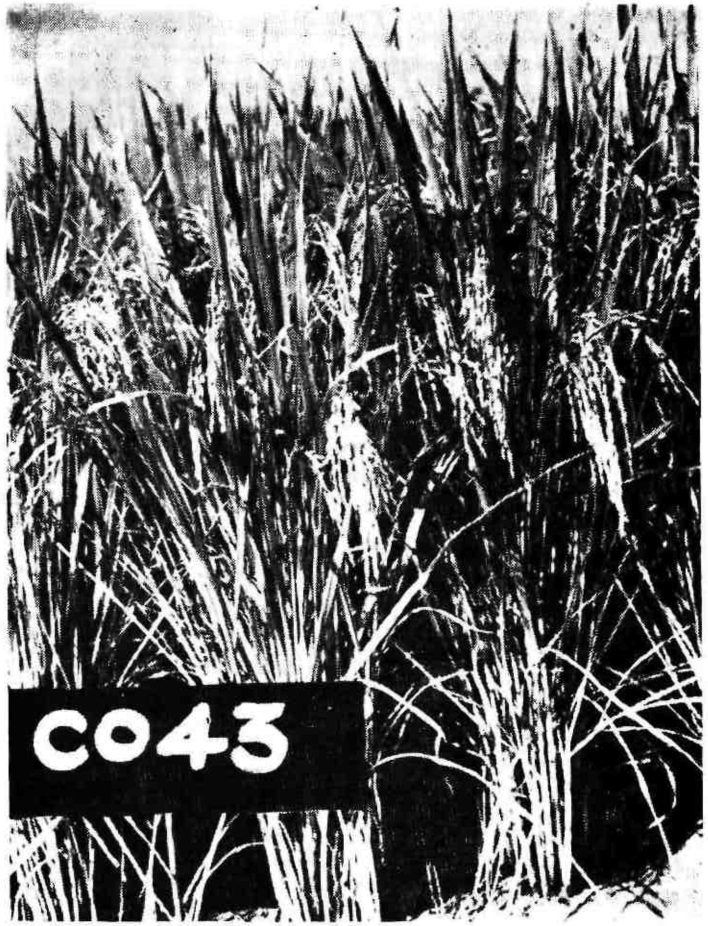
Blanket recommendation of fertilizers registered lower BCR (5.70 for CSH. 5 and 5 63 for CO. 23). Fertilizer prescription based on targetted yield approach registered higher BCR (CSH 5-7. 10 to 8.20 and Co. 23-7 18 to 9.71).

Among the different systems experimented for moisture conservation at Kovilpatti, compartmental bunding, broad bed and furrows and ridges and furrows were on par but significantly superior to flat bed system.

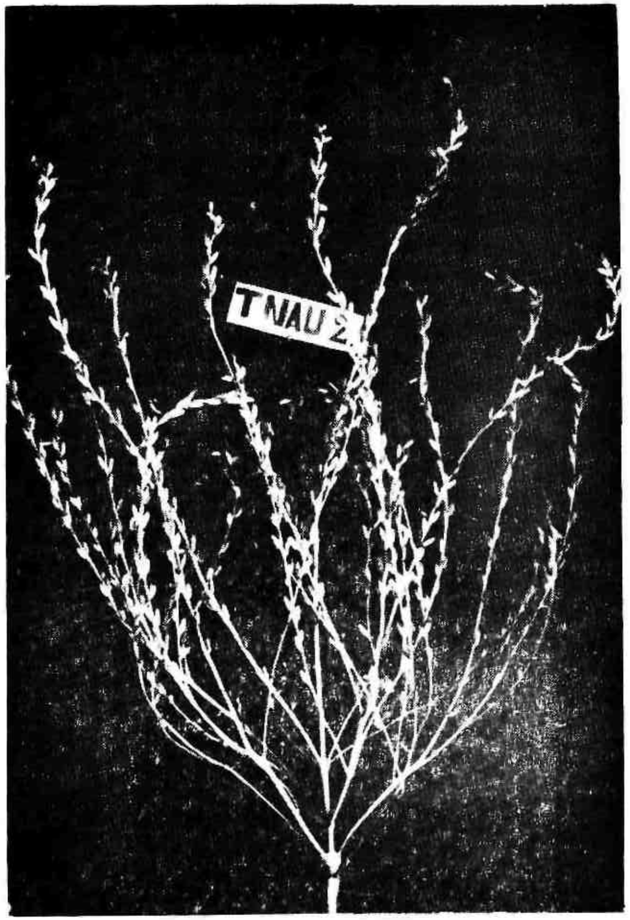
For the integrated weed control, Atrazine 0.2 kg a. i. per ha. coupled with one hand weeding was effective in weed management in sorghum

Crop Protection :

The granular nematicides phorate 10 G, aldicarb 10 G, disulfoson 5 G, Phenamiphos 5 G and carbofuran 3 G, at 1 kg a.i./ha at seed hole, were effective in checking the lesion nematode population in Co. 24 in the



Co 43 Rice



Co 1 Sesamum

X 5 Pearl Millet

CO.10 LAB LAB

Co 10 Lab-Lab

Co 44 Rice

Co 4 Cowpea

Madurai Campus Students Transplanting Rice in the College Farm

order mentioned and gave increased grain yield ranging from 30 to 53% over the control.

The synthetic pyrethroids cyfloxylate, cypermethrin, permethrin and fenvalerate each at 150 g a. i./ha and deltamethrin at 25 g a. i./ha had effectively controlled gall midge and earhead bug.

The hanging type of fish meal trap was really more attractive to shootfly adults compared to water pan trap.

PEARL MILLET :

Crop Improvement :

X 5 cumbu :

A cumbu hybrid with parentage of L 111. A x African inbred PT. 1921 has been found to yield on an average 3041 kg/ha under irrigated condition. It is highly resistant to Downy Mildew.

WHEAT :

Crop Improvement :

The wheat varieties DWR 39 and HD. 2189 are ideally suitable for growing in Coimbatore, Periyar and Dharmapuri districts and also in the hills of Thalavadi, Kolli and Yercaud. These varieties are free from rust disease. The best time of sowing is the first fortnight of November. A seed rate of 125 kg/ha can be used. The recommended dose of fertilizer is 80 N : 40 P : 40 K kg/ha with a basal does of FYM 25 t/ha.

MAIZE :

Crop Improvement :

Co. H1 Maize :

This is a single cross hybrid between two elite inbred lines viz. UMI 29 and UMI 51. It is resistant to downy mildew besides early maturing (85-90 days). It also tolerates drought and brackish water. This is intended to replace Ganga. 6 and K 1.

Crop Management

Maize responded well to higher level of fertilizer application (NPK 150%)

A combination of pig manure at 5 t/ha and ZnSo4 12.5 kg/ha registered higher yield (4733 kg/ha) over NPK control (3609 kg/ha).

Crop Protection

Application of aldicarb 1 kg ai/ha at the time of sowing in seed hole was effective in checking the lesion nematode population and increased the grain yield by 33%.

Pulses

Blackgram

Crop Management

At Coimbatore blackgram Co. 4 can be sown 45 days in advance to the sowing of cotton crop. This minimises the competition effect and facilitates earthing up of cotton at the appropriate time.

At Pudukkottai combined application of lime at 2 t/ha and sheep manure at 20 t/ha was found to increase nodulation, growth and yield besides neutralising soil acidity.

Pelleting with superphosphate at 3 kg per 25 kg of seeds recorded 32% increased yield over control.

At Aduthurai, soaking of seeds in 8% solution of MnSo4 for 4 hours and drying on the previous day evening and sowing next day gave a grain yield of 822 kg/ha.

Foliar spraying of KCl 1.5% recorded a yield of 579 as against 446 kg/ha for the control.

Application of carboxin (Vitavax) at 750 g/ha once 25 DAS and again 45 DAS was found to be effective against blight and powdery mildew diseases.

Spraying of carbendazim at 100 g/ha twice at fortnightly intervals from the initial occurrence of powdery mildew or blight effectively controlled the diseases.

Seed Storage

Blackgram seeds (ADT. 1 and ADT. 2, with an initial moisture content of 9%, slurry treated with 2 g of TMTD (Thiram) 75% WP' 250 mg of DDT 50% WP and packed in a double layered 400 gauge thick polythene bags covered over by gunny bags could be stored for 12-15 months with a germination of more than 80%

Greengram

Crop Management

Treating the seeds in potassium dihydrogen phosphate increased the grain yield.

Co. 4 sown 45 days in advance of sowing of cotton gave a grain yield of 1840 kg/ha with additional net income of Rs. 940/ha.

Pelleting with supersphosphate at 3 kg per 25 kg of seeds recorded 37% increased yield over control at Aduthurai.

At Trichy, greengram was found to be more suited to sodic soil than blackgram.

At Madurai application of pre-emergence weedicide Basalin at 1.0 kg a.i/ha was effective in controlling weeds. The grain yield of 1280 kg/ha was higher than that of the twice - hand weeding treatment by 360 kg/ha.

REDGRAM

Crop Management:

At Pudukkotai, it was found that Co 3 redgram inoculated with HP. 195 Rhizobium strain increased the grain yield by 25% over the uninculated check.

Crop Protection:

Application of two rounds of fenvalerate (Sumicidin) 005%, Cypermethrin (Ripcord) 0 004% at 50% flowering and a fortnight later reduced the incidence of pod borer and pod fly besides increasing the yeild.

BENGALGRAM

Crop Management:

Pre-soaking of seeds in KH2PO4 1% solution for 4 hours gave a grain yield of 693 kg/ha as against 604 kg/ha for dry seeds. The additional het return worked out to Rs. 265/ha.

Foliar application of urea 2% twice (at flowering and 15 days later) gave a grain yield of 712 kg/ha with a gross income of Rs 3560/ha as against 625 kg/ha and Rs. 3127/ha as against 625 kg/ha and Rs 3127/ha for water spray.

COWPEA

Crop Improvement:

Co. 4 cowpea: It is a drought tolerant type developed through pureline selection. It has recorded a mean grain yield of 1572 kg/ha under irrigated condition and 916 kg/ha under rainfed condition.

Crop Management :

The study on the apportionment of fertilizers in cropping sequences (redgram-maize, maize cowpea-ragi and maize-ragi) under irrigated conditions made at Vamban revealed that the crop sequence of maize-cowpea-ragi was the best and the application of full recommended dose of NPK to the first crop and half the recommended dose to the second crop resulted in good return.

At Pudukkottai, the inoculation of Co.4 cowpea and C. 152 with Rhizobium strains UA. SVU. 1 and DE. 6 enhanced grain yield by 26 and 130% respectively over the control.

SOYBEAN

Crop Management :

There was significant response to soil application of 25 kg MnSo4/ha in red soil with a grain yield of 15.8 q/ha which was 74% increased over NPK (40 80-40 kg/ha) alone. In black soil MnSo4 1.5% as foliar spray 20, 30 and 40 DAS resulted in a grain yield of 11.3 q/ha which was 62% increase over the check NPK.

Post-harvest Technology :

A pulse thresher suitable for thershing all legumes was fabricated.

LAB LAB

Crop Improvement :

Co. 10 lab lab: It is an economic macromutant following 24 Kad gamma ray irradiation of lab lab Co. 6. It yields 7296kg of green pods. The plants ~~are~~ bushy needing no support.

Oil Seeds

Groundnut

Crop Management

Pre-emergence application of fluchoralin at 0.75 kg ai/ha followed by one earthing-up on 40 DAS was found to control the weeds of irrigated POL. 2 effectively at Bhavanisagar. The chemical control resulted in a saving of Rs. 70/ha compared to manual weeding besides increasing yield.

At *Tindivanam*, the yield of pods (TMV. 7) was consistently high for two years in straw mulch treatment registering 41% higher yield over Control. The weed population was less by 70% and also the incidence of leaf miner was less by 50%. The soil moisture was found to be higher on 45th day. The cost of mulching was more than compensated by the additional yield.

At Madurai, irrigation at 4 cm depth recorded higher pod yield of 3080 kg/ha. Basal application of coir waste at 105 t/ha recorded high pod yield of 4040 kg/ha.

The experiment conducted at Coimbatore showed that the percentage of Ca and S derived by the crop was higher when CaSo4 (gypsum) was applied. Application of Ca as $CaCl_2$ or S as K2So4 was found to result in reduced uptake of Ca and S.

At Tindivanam, a new bullock drawn sowing implement has been successfully tested.

Crop Protection

At Vridhachalam, spraying synthetic pyrethorids viz., permethrin or cypermethrin or decamethrin or decamethrin at 0.01% was found to be effective in controlling leaf miner.

At Madurai, cypermethrin at 62.5 g ai/ha, FMC 35001 at 0.1% and methamidophas at 0.06% gave effective control.

At Madurai, the pyrethroids permethrin and cypermethrin at 75 g ai/ha and ethion at 0.05% gave 100% control of red hairy caterpillar within 48 hours.

Pot culture experiments showed that soils heavily infested with the root-knot nematode, Meloidogyne incognita can be cropped with either groundnut or sesamum as these crops are not attacked by the nematode.

Two sprayings at 60 and 75 DAS with Baycor 0.2% or Daconil 0.2% effectively controlled both tikka leafspot and rust diseases at Vridhachalam. The new fungicide Topsin-M at 0.1% was very effective in controlling tikka leaf spot and in increasing the yield on par with Bavistin 0.05% + Dithane M. 45 0.1%.

At Madurai, spraying Bavistin 0.05% + Dithane M. 45 0.2% followed by Bavistin 0.05% and Topsin 0.05% were better than other chemicals in reducing the incidence of tikka leaf spot. Dithane M. 45 0.2% followed by Baycor WP 0.2% and Calixin 0.1% were superior in reducing the incidence of rust. A combination of Bavistin 0.05% and Dithane M. 45 0.2% was effective against both the diseases. The spraying has to be done twice, the first on 50 DAS and the second on 70 DAs.

Sesamum

Crop Improvement

Co. 1 Gingelly It is a derivative of backcross of the hybrid TMV. 3 X SL 1878. A plant type having compact branches from basal nodes with more productive axils on the main stem as well as branches. Its average grain yield is 586 and 734 kg/ha under rainfed and irrigated conditions respectively.

Crop Management :

In TMV. 3 grown under Madurai conditions, application of Azotobacter + Azospirillum + 10 kg N/ha (half does) resulted in a grain yield of 263 kg/ha which was higher than the grain yield of 220 kg/ha obtained with the application of 20 kg N/ha (full does) alone.

The azospirillum inoculation in rainfed crop increased the plant height, number of branches/plant and number of capsules/plant in all the N levels tested. The plant growth and yield were high in Azospirillum inoculated, 75% N added treatments. In irrigated crop, the plant height, number of branches/plant and number of capsules/plant were good in the Azospirillum inoculated, 75% N added treatment, followed by 100% N with Azospirillum inoculated treatment. The yield data recorded in Azospirillum inoculated, 75% N treatment and uninoculated 100% N treatment were statistically on par.

Intercropping :

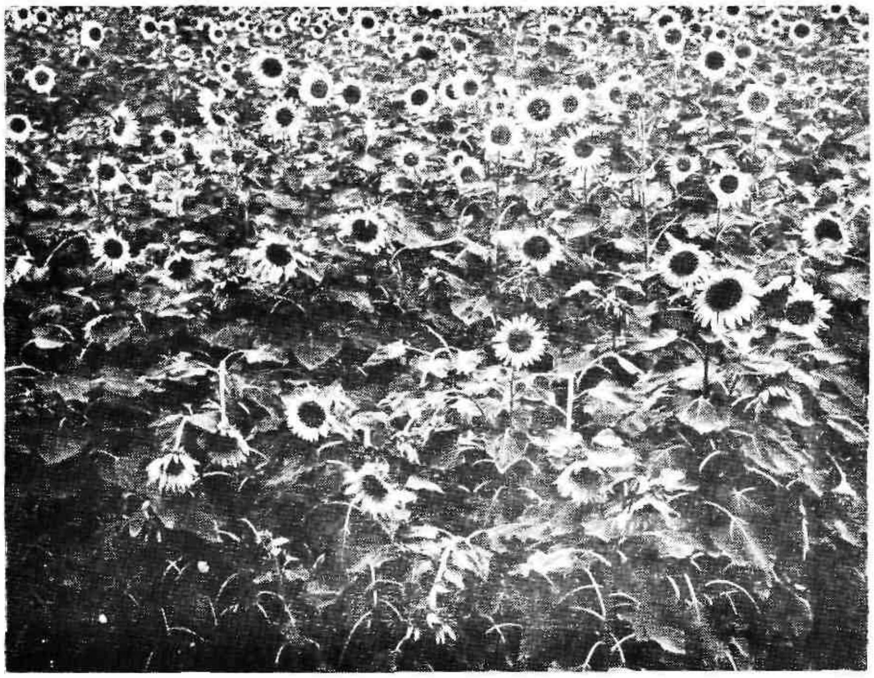
Cowpea and greengram were found suitable for growing as intercrops in sesamum in both monsoon and summer seasons. Sesamum-greengram (2 : 1) combination gave 525 kg of sesamum and 240 kg of greengram per ha as against 490 kg of pure crop of sesamum and 400 kg of pure crop of sesamum and 400 kg of pure crop of cowpea per ha.

Crop Protection :

At Vridhachalam, spraying of cypermethrin 0.005% or decamethrin 0.003% or

Co 1 Cumbu-Napier Hybrid Grass

Co 1 Sunnhemp



Co 1 Sunflower

Desmanthus

fenvalerate 0.075% 20 and 55 DAS effectively controlled shoot webber and gall midge.

Triadmifon (Bayleton 0.1%) and bilaxazal (Baycor 0.1%) were superior to ohter treatments in controlling powdery mildew disease. Two sprays were given 45 and 60 DAS. The yield was also high in Bayleton and Baycor treated plots.

Seed Technology :

Mid-stroge hydration-dehydration treatment for prolonging the shelf-life of sesamum TMV. 3 seed : Four months old TMV. 3 seeds (retained by BSS 14 apperture width 1.6mm wire mesh sieve) recording 90.7% germination (initial germination 97%), mean root length production potential of 10.2 cm (initial 12 83 cm) and dry matter production potential of 54 mg/10 seedlings (initial 59 mg) when hydrated in double the volume of dilute solutions of sodium phosphate (dibasic) at 10.4 M concentration for 2 hours dehydrated to 5 per cent moisture content and treated with Bavistin at 2 g/kg of seeds were able to remain germinable upto 86% under open storage for a further period of 8 months and upto 84% for a further period of 10 months in sealed storage under ambient temperature and relative humidity' their respective mean root length production potentials were 7.2 cm and 7.9 cm and their respective dry matter production potentials were 34 mg and 32 69 mg/10 seedlings.

SUNFLOWER :

Crop Improvemant :

Co. 1 Sunflower :

It is a dwarf plant type with 70 cm height maturing in 60-65 days. The mean grain yield of this variety is 1000 kg/ha under irrigated and 700 kg/ha under rainfed condition.

Crop Management :

Sunflower was sown as a border crop in ragi and wheat at Coimbatore. The wheat crop was raised in narrow long beds 4 X 3 m and ragi in 6 X 3 m beds. Sunflower (morden) was dibbled along the borders. Sunflower crop did not compete with the main crop of wheat and ragi and gave 260 kg and 150 kg per ha with wheat and ragi respectively.

At Aruppukkottai, application of Azotobacter + Azospirillum + 30 kg N/ha (3/4 does) resulted in a grain yield of 1146 kg/ha obtained with the application of 45 kg N/ha (full dose) alone.

Sunflower seeds (Morden) were soaked in ZnSo4 2% for 12 hours. Seed soaking gave grain yield of 1195 kg/ha as against 1054 kg/ha in kharif and 1531 kg/ha as against 1252 kg/ha in summer for the water soaked control. Thus seed soaking for 12 hours in ZnSo4 2% solution recorded higher seed yield and higher net return over water soakings.

COCONUT :

Crop Protection :

Operational research work carried out a Vilangombai and Karadipatti proved that trunk injection of 5 ml of monocrotophos (Monocil or Nuvacron) at the commencement of summer, effectively protected the palm against Nephantis serinopa, for a period of 6 months.

At Madurai, application of undiluted monocrotophos by trunk injection at 5 ml/

tree was found to be effective in checking the black headed caterpillar of coconut for 23 weeks. Again, injection of 10 ml/tree of the same chemical was found effective in checking red palm weevil

COTTON :

Crop Improvement :

MCU. 10 cotton :

This variety, evolved through mutation breeding, is capable of yielding 7.5 ha. It is superior to MCU. 6 and Laxmi in yields' ginning out-turn and spinning counts. It is earlier than MCU. 6 and Laxmi and is tolerant to drought and resistance to jassids and blackarm disease.

Crop Management :

At Coimbatore, in MCU. 9 and Varalakshmi cotton raising nursery in advance and transplanting 30 days old seedlings gave increased yield over direct seeding. Transplanting proved more beneficial under late direct seeding. In water scarcity areas nurseries can be raised at required intervals and transplanting done in a phased manner. The field duration also gets reduced by 10-15 days.

Dry seeding of rainfed cotton can be done during the3rd week of September in black cotton soils of Coimbatore. The problem of erratic emergence and the resultant loss of population in the dry seeding can be reduced by soaking the delinted cotton seed in 1000 ppm CCC and sowing at a depth of 5 cm. The dry seeding gave 20-30% increased yield over normal practice of sowing after the rains.

Soil-test - crop - response experiment conducted with cotton MCU. 5 in black soil of Perianaickenpalayam with 5 levels of V viz. 0, 60, 120, 180 and 240 kg/ha, four levels of P_2O_5, viz., 0, 17, 34 and 51 kg/ha and three levels of K_2O viz., 0, 17 and 34 kg/ha during rabi season (August '82-March '83) resulted in the development of the fertilizer prescription equations. The adoption of this equation for recommending the fertilizer schedule for cotton to get specific yield was found advantageous to blanket recommendation.

At Srivilliputtur, a crop sequence of cotton followed by one pulse crop and paddy was found to be the best for the summer cambodia tract under tankfed irrigation.

Application of Azotobacter alone increased the seed cotton yield by 54kg/ha under rainfed conditions at Paiyur. The treatment in which N was applied at 70 kg/ha registered the highest yeild of 536 kg/ha which was on par with Azotobacter + 52.5 kg N/ha. There was a saving of N by 17.5 kg. The above recommendation holds good for sandy loam soil with low available N status.

The fertilizer schedule of 75 0-37.5 kg NPK/ha was found optimum to rainfed cotton for sandy loam soils of low available N and P and medium in available 'K' in Dharmapuri district.

For cotton, neem coated, lack coated urea and urea alone behaved similarly. Three split applications of N, 1/3rd at seeding, 1/3rd at 30th day and 1/3rd at 60th day was advantageous in increasing cotton yield.

Application of Azospirillum + VA mycorrhiza + 45 kg N/ha (3/4th does) +

45 kg/ha P_2O_5 (1/2 dose) increased the kapas yield to 1850 kg/ha and resulted in a saving of 15 kg N/ha and 15kg P/ha at Srivilliputtur.

The new permanent manurial experiment conduct at Coimbatore on the effect of continuous application of organic manures and inorganic fertilizer on the yield of cotton kapas (Var. MCU. 9) revealed that among the ten treatments tried, NPK treatment recorded the highest yield of seed cotton.

Crop Protection :

Four varieties Deltapine 45, MCU. 3, SB. 289 E and Cernum were identified as donors for breeding varieties resistant to stem weevil.

When nine insecticides were tested against stem weevil in MCU 9. application of BHC 0 1% at stem region four times at 15 days interval was the most effective.

Experiments conducted for the control of sap feeding insects on dry cotton revealed that seed treatment with carbofuran 50 SP at 10 W/W and carbofuran 40 F at 10% W/W were effective to render protection upto 4 weeks.

At Madurai need-based application of 3 rounds of either monocrotophos 0.005% or endosulfan 0.07% or four rounds of fenvalerate 0.04% or phosalone 0.07% or chlorpyriphos 0.04% was sufficient for the control of cotton bollworms. The final per cent incidence of boll damage in these treatments varied frOm 4.14 to 7.68 in comparison to 21.58 in the control.

In another trial, spraying with decamethrin 0.0015% on 75 and 110 DAS alternated with neem seed Kernal extract 3% on 90 and 130 DAS resulted in reduced incidence of spotted bollworm (25.22%) when compared to unsprayed plots (38 68%) and also resulted in an increased yield (668 kg/ac) compared to control plots (312 kg/ac).

Seed treatment with aldicarb sulfone at 12% ai (W/W) reduced the population of reniform nematode, Rotylenchulus reniformis by 52.4% at 45 DAS and increased the yield by 23.1%

The storage fungi in MCU. 9 cotton seeds were Aspergillus flavus (10%) A. niger (5%), Fusarium moniliformae (12%), F. semitectum (8%), Rhizopus sp (15%), and Mucor sp (35% Fuzzy seeds without any seed treatment or acid delinted seeds with TMTD (Thiram) (0.2%) or carbendazim+TMTD (1:1) slurry treatment maintained via bility of cotton seeds upto 10 months. In fuzzy seeds, seed treatment reduced Mucor sp. and Rhizopus sp. but increased Aspergillus sp. If acid delinted seeds are to be stored, slurry treatment should be invariably given.

Sugarcane

Crop Improvement

Co C 8201 Sugarcane

It is a cross between Co. 740 and Co 62174. It is suitable for the late season also. This is superior to existing varieties Co. 6304 and Co. 419 in respect of cane yield, quality and c.c s. and gives an average yield of 140 t/ha.

Crop Management

At Cuddalore manuring beyond 90 days Suppressed the yield.

At Sirugumani, the split application of N (275 kg/ha) *in equal doses 25 and 75* DAP increased the yield and quality in CCC 671 and Co. S[1] 776 over the method of manuring 45 and 90 DAS.

Trash mulching 35 DAP and spraying of Kaolinite at 12% dissolved in 750 l/ha on 90th day registered 96.6 t/ha - an increase of 13 2% over the check.

COC 671 a shallow rooted variety was studied at Gudiyatham for the optimum depth of planting. Planting of COC 671 setts at 20 cm depth from ridge point in a 11 months crop recorded the highest yield of 131 t/ha.

The effect of bio-fertilizers Rhizobium, Azospirillum and Azotobacter in combination with 3 levels of N viz, 120, 180 and 240 kg/ha with and without blending with neem cake on the yield of sugarcane was studied in four locations, Coimbatore University Farm, SBI, Amaravathi and Vadapathimangalam. Azospirillum was found highly useful as a bio-fertilizer. Combined application of 180 kg N as urea blended with neem cake and Azospirillum inoculation recorded the highest cane yield besides saving of 60 kg N/ha.

Crop Protection

Application of Calixin at 500 ml/ha recorded the least rust disease incidence followed by Daconil 750 g/ha and Dithane M. 45 1.5 kg/ha.

Forage Crops

Crop Improvement

Co. 1 Cumbu-Napier Hybrid Gra s: It is a cross derivative of a ICRISAT cumbu variety PT. 2787 and Napier grass. This tall grass tillers profusely and possesses a high *leaf-stem ratio. The digestibility* of this grass is 58% and its mineral constitutents are of a high order compared to the existing hybrids.

Hedge Lucerne:

This new plant species - Desmanthus virgatus is a perennial forage legume. This is an introduction from Thailand. This grows profusely and yields green fodder of 124 t/ha/year. This legume is capable of growing in tree shades and shaded situations.

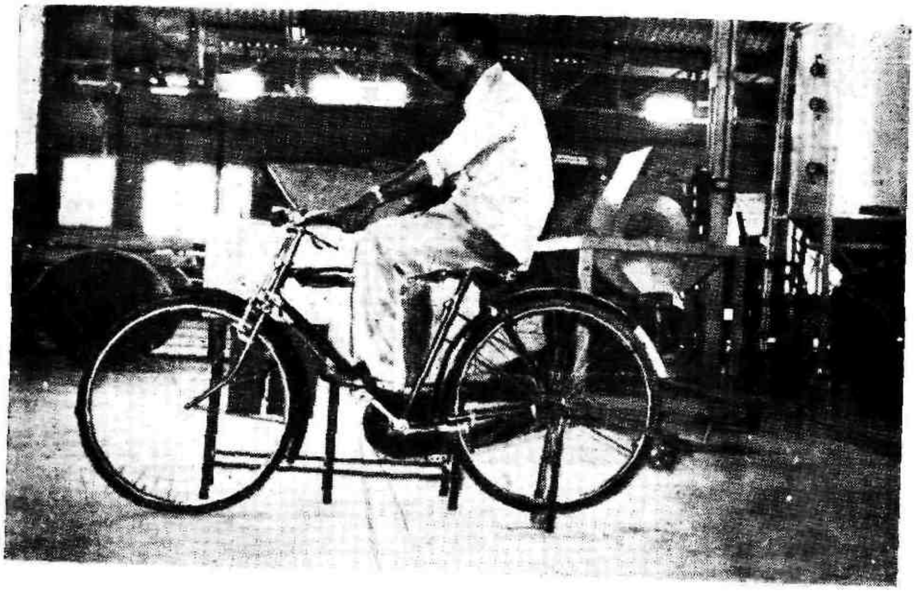
SS1. Sunnhemp:

SS1. Sunnhemp yields consistently higher level of green matter than the existing variety. On decomposition it adds 99 kg nitrogen per ha.

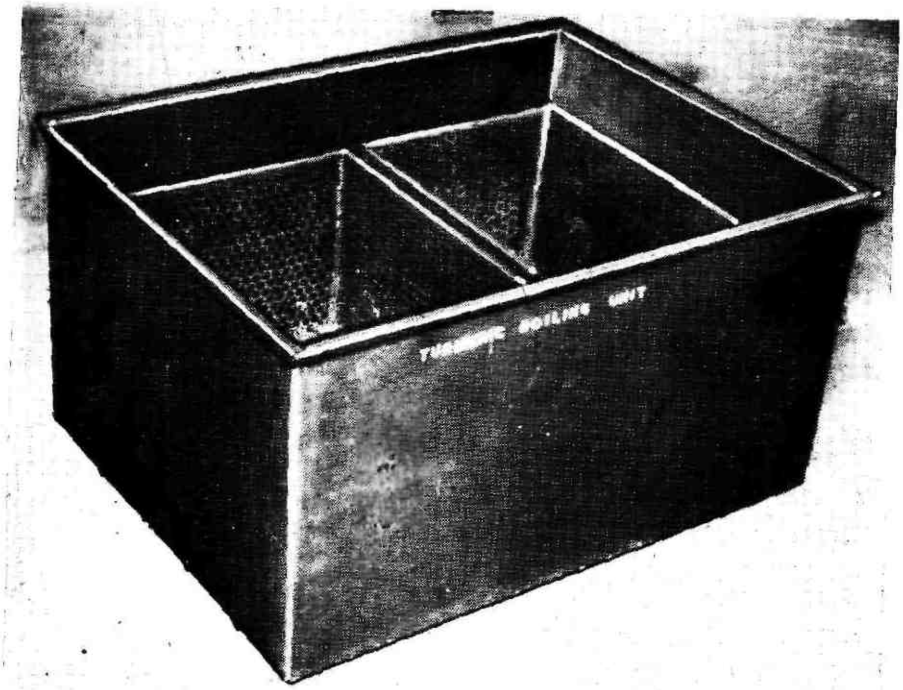
The sorghum culture FS 1 of inter-specific hybrid origin was identified as promising due to its tillering ability and high fodder yield of 44.5 t/ha in 55 to 58 days. It is under adaptive trial. Amenable for ratooning, unlike Co. 11 and K. 7, FS. 1 yields about 25 t/ha additionally in 50 days after the first cut.

Desmodium is a shade tolerant forage legume coming under the shade of trees like tamarind, eucalyptus, etc. When sown in June - July, it can be cut twice at interval of three months and thereafter during the summer it dries up. The crop under shade yields 16.6 t/ha and 7.14 t/ha in the first and second cuts against the crop under normal condition of open field, yielding 13.33 t/ha and 8 3 t/ha respectively.

Two high yielding cowpea mutants of Co. 1 viz., FCP. 1, FCP 2 with

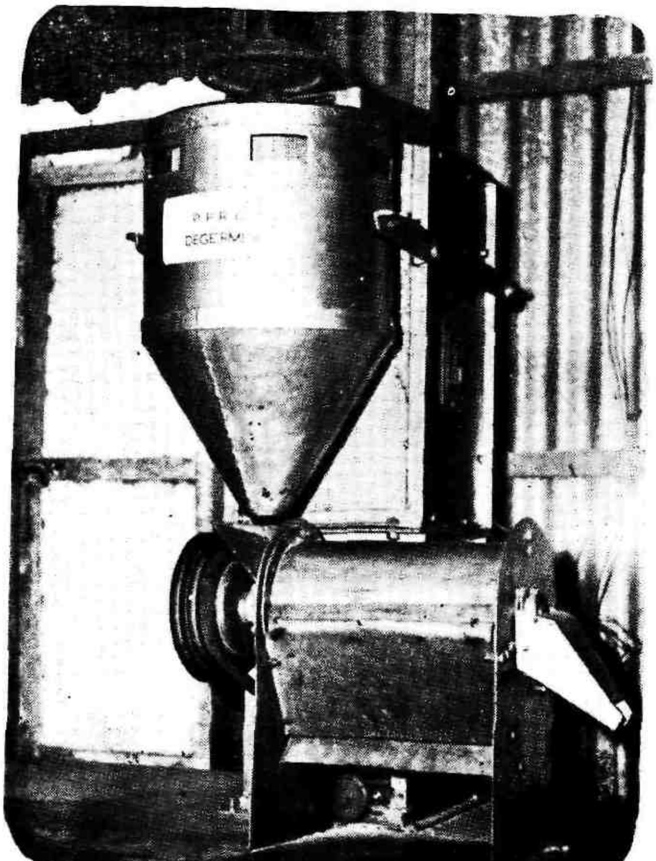


Cycle Powered Winnower

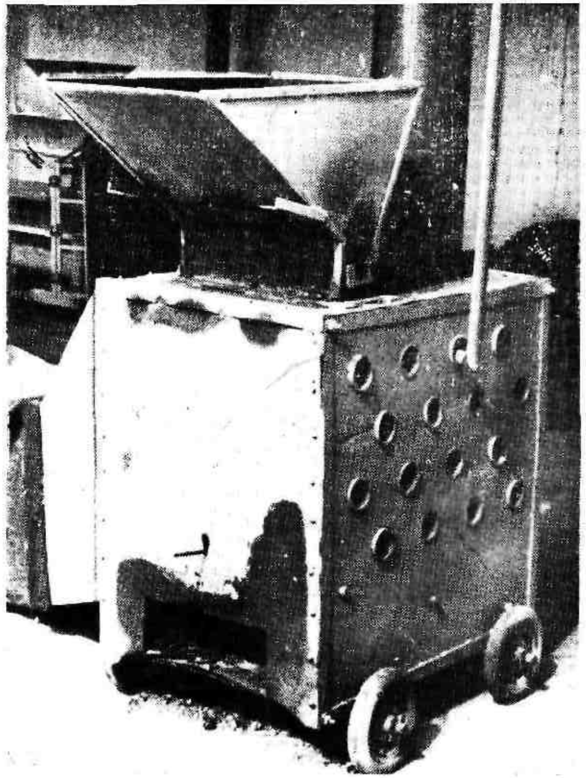


Turmeric Boiling Unit

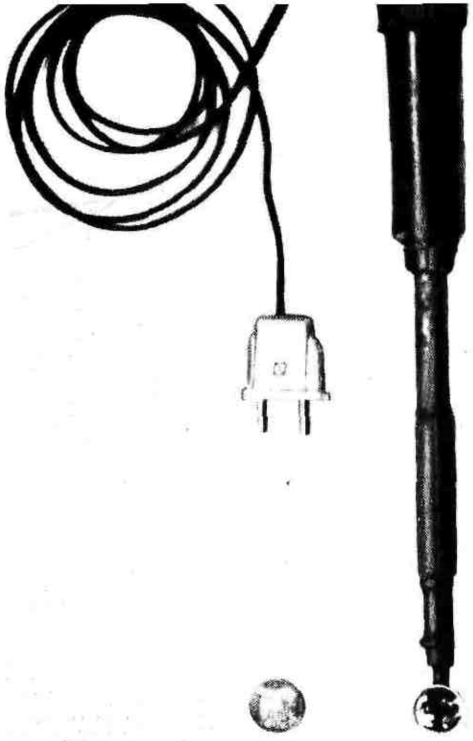
Retention of Germ in Milled Rice



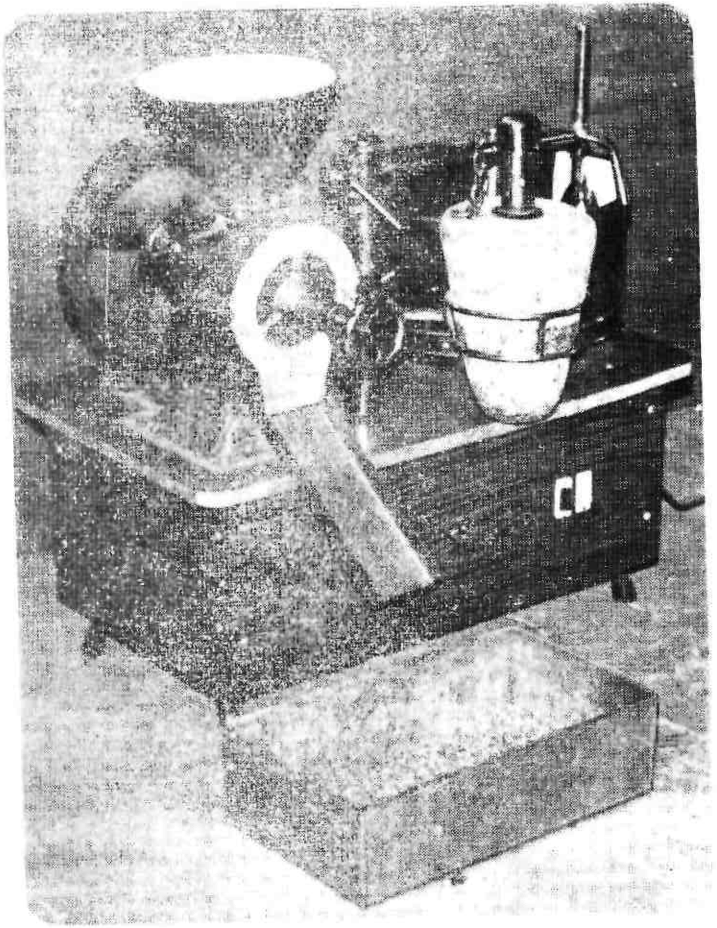
PPRC Degermer



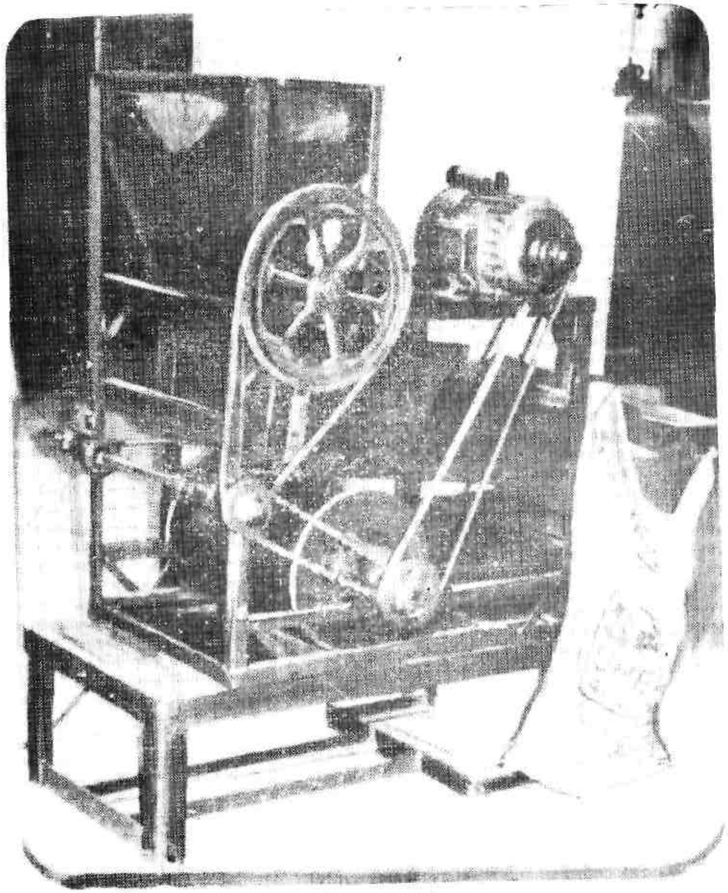
Waste Fired Drier



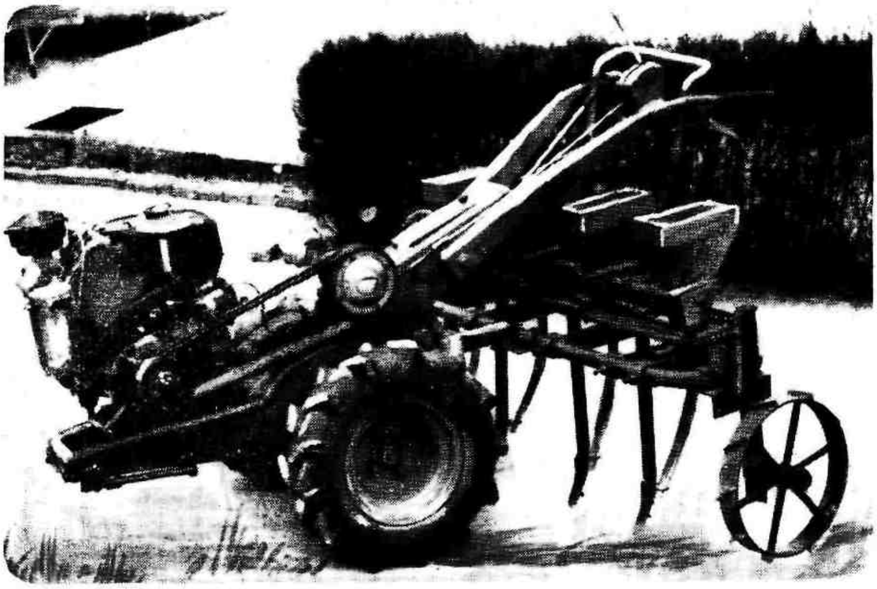
A Simple Device to Debeak Poultry



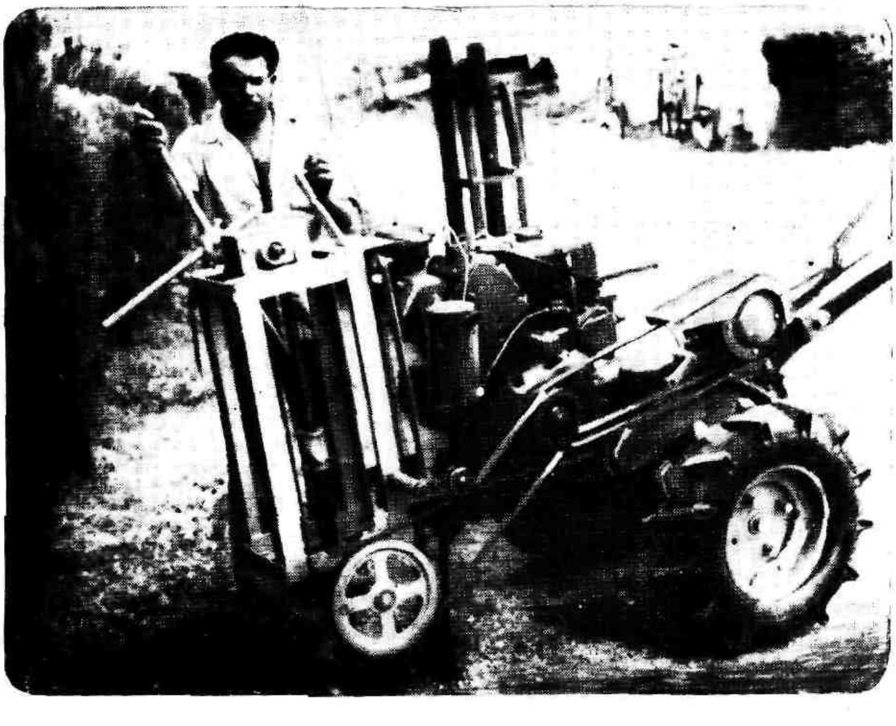
Wet and Dry Milling Unit



Coffee Grader

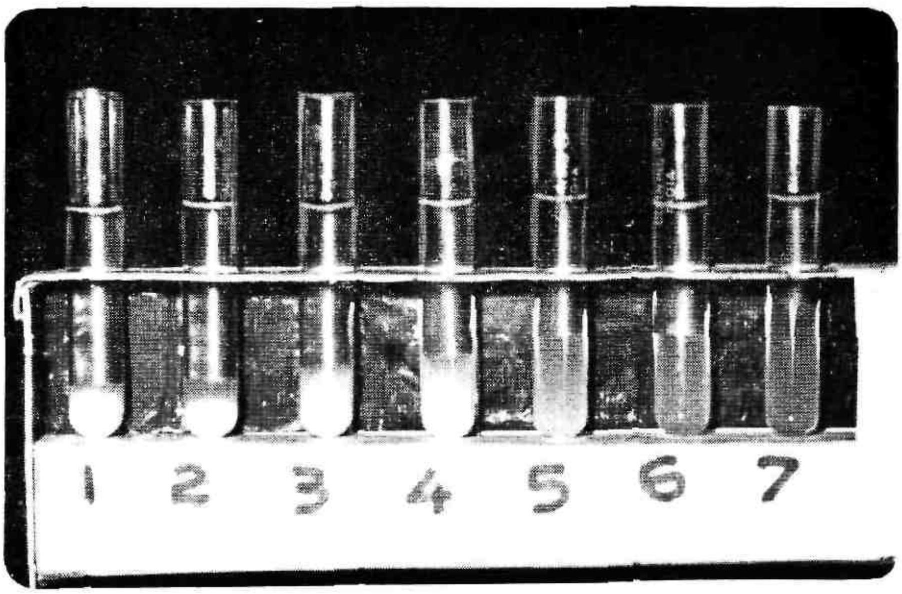


Multipurpose Tool Carrier as an Attachment to Power Tiller

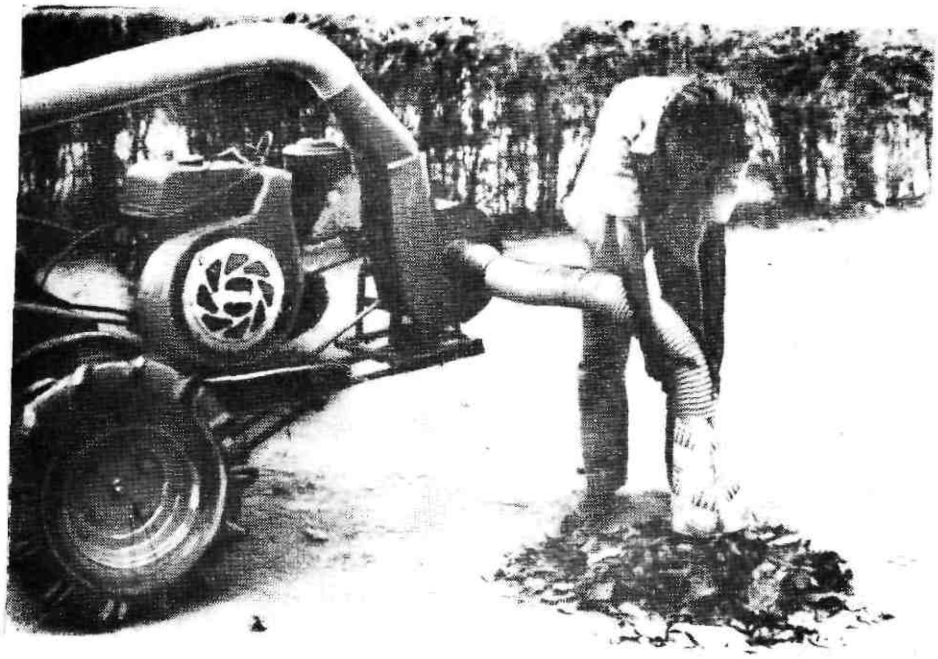


Post Hole Digger

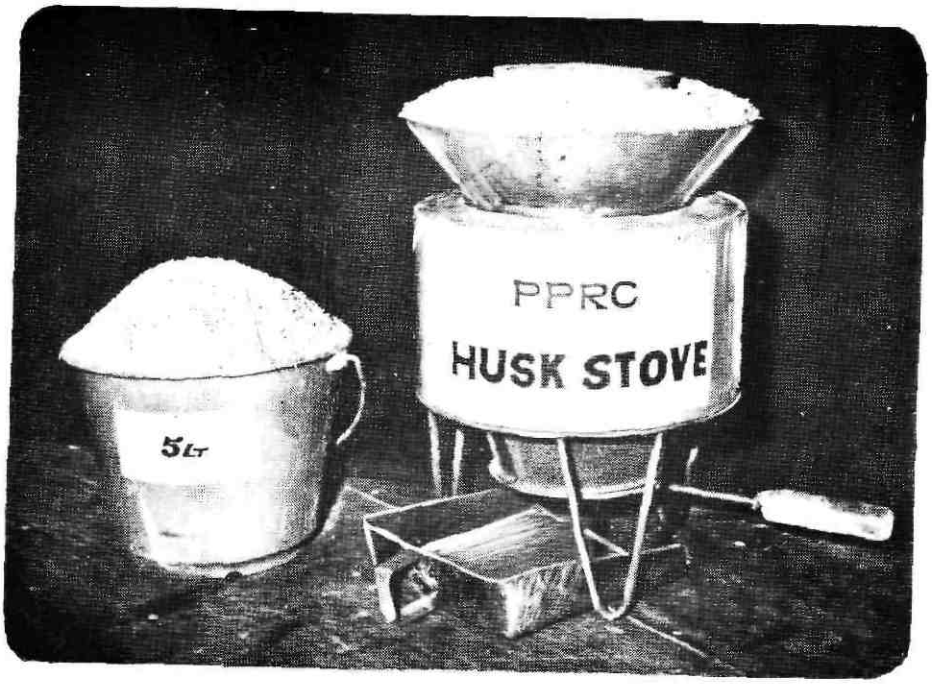
Liquid Injector for Rice Fields



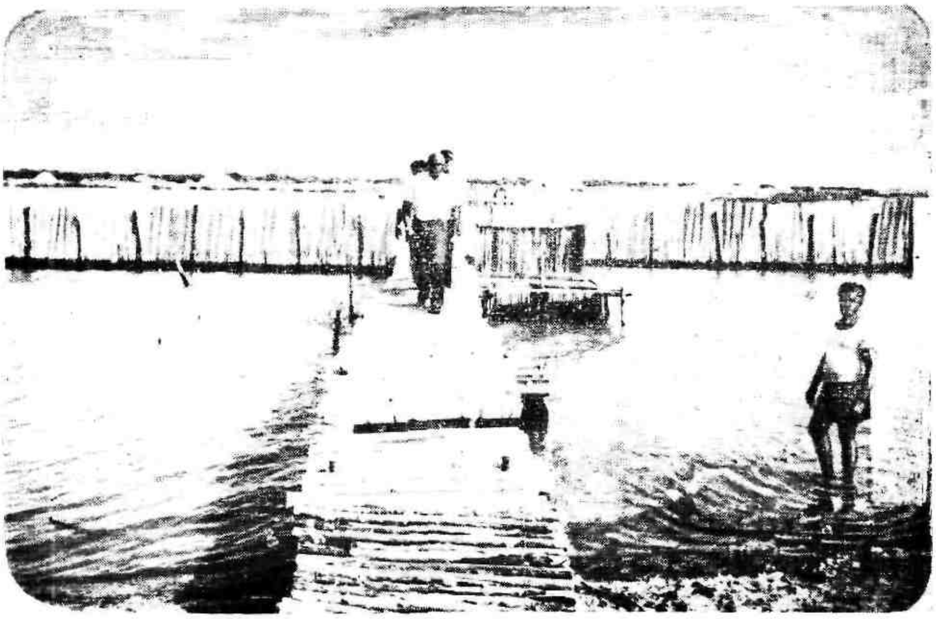
Field Test to Indicate the Tenderness of Parboiled Rice



Carbage Collector



Low Cost Husk Fired Stove



Brackishwater Fish Pens at Fisheries College, Tuticorin

Field Day at Sengulam Village conducted by Plant Clinic Centre, Tirunelveli

indeterminate habit were spotted for evaluation/testing. They have a yield potential of 18 t/ha against 14 t/ha of Co. 1 in 55 to 60 days.

Clitoria ternata (Sangu pushpam) is a hardy *perennial legume suitable for arid* and semi-arid conditions and it is extremely drought resistant. Grown as a rainfed crop three cuttings can be taken at an interval of 40 to 45 days. The green fodder yields recorded in the first, second and third cuts are 11.2, 9.7, 9.1 t/ha totalling to 30 t/ha per year. It survives for three years but green fodder is obtained during the monsoon period only.

A selection in each of Marvel grass (Dicanthium annulatum) and spear grass (Heteropogon contortus) suitable for cultivation *under rainfed conditions on marginal* lands has been made. These selections, capable of yielding about 40 and 25 t/ha/year of green fodder respectively are under confirmative trials.

In guinea grass *(*panicum maximum), the selection CGG. 2 has a yield potential of about 120 t/ha/year of green fodder.

At Sandynallah, the performance of temperate grasses like Phalaris tuberos (tuber grass), Bromus unilcides (American wonder grass), Loligum multiform (Italian Rye) and Dactylis glomerata (Cocoks foot) was better than Pennisetum clandestinum (Kikiyu). Among legumes, annual types like Vicia spp (Hairy vetches) and perennials like Trifolium repens (white *clover), T. incarnatum (Crimson clover)* and T. Subterraneum (subterranean clover) were found to be promising. Two oat varieties UPO 50 and UPO. 94 were rated as superior to the locally cultivated variety, Kent The African tall maize variety was found to be suitable for the temperate conditions

In the rainfed black cotton soils at Palani, the cumbu-napier hybrids NB. 21 *and BN. 2, the Cenchrus variety FD 384,* African tall maize, the cowpea cultivar DPI 1283 and the Rajendranagar variety of horsegram were found to perform well. Besides, the K. 8 variety of Leucaena and Desmanthus virgatus were also adjudged as the hardy legumes for the tract.

AGRICULTURE ENGINEERING :

Agriculture Structure :

Processing equipments

Cycle powered winnower, pulse thresher; agricultural waste fired drier and wet and dry milling unit were fabricated.

Farm equipments :

Urea super granules applicater for rice, tractor operated low lift high volume pump, power tiller operated paddy harvester, multipurpose tool carrier as an attachment to power tiller, liquid injector for rice fields were developed.

Soil and Water Conservation :

It was found that long furrow system conserved moisture better than tractor drawn wide furrow system or check basin system.

Agro-Energy :

Box-type solar cooker, biogas purifier, *biogas stove, saronius type wind mill were* fabricated. Laboratory investigation proved the usefulness of the weed parthenium as a supplementary feed stock in biogas generation.

The poultry droppings, rumen fluid and old slurry mixed with cowdung (1 : 1 : 1.4 level) maintained at 37°C recorded the maximum biogas generation (1080 cc/day) over a period of 11 weeks. The digested slurry maintained its P content (1.1%).

HORTICULTURE :

Fruit Crops :

Crop Improvement :

Co. 1 Pomegranate

It is a selection capable of giving 50 fruits on an average per year.

Co 3. Papaya

Papaya Co. 3 is a hybrid between Co. 2 papaya and Sun Rise Solo. By nine months after planting first fruit can be harvested. It is hermaphrodite in nature.

Co 4. Papaya

This is a hybrid between Co. 1 and Washington. By nine months from planting first fruit can be harvested. It yields about 200 t/ha.

BANANA :

Crop Management :

In an effort to diversify banana clonal situation in Pal r basin which was mono-clonal (growing mostly cavendish clones for over 50 years) poovan was introduced in Vadranthanal village with success.

To prevant the damage by R. similis and H. multicinctus nematodes, banana suckers have to bepaired at the time of planting followed by application of carbofuran (40 g/sucker one month after planting.

In dwarf cavendish banana spraying with Bavistin 0.1% was found to be effective to control Sigatoka leafspot disease. Five sprayings at fortnightly interval are to be given from the first appearance of the disease.

Application of carbofuran or aldicarb at 2 kg ai/ha, 6 months after transplanting effectively checked the reniform nematode population and increased the yield.

Grapes

From the results of a fungicidal trial, spraying karathane at 0.07% concentration four times at fortnightly intervals commencing from the time of flowering is recommended for the control of powdery mildew in grapes.

Jack

To attain 65 to 83% success grafting is to be done in the period January to June.

Mango

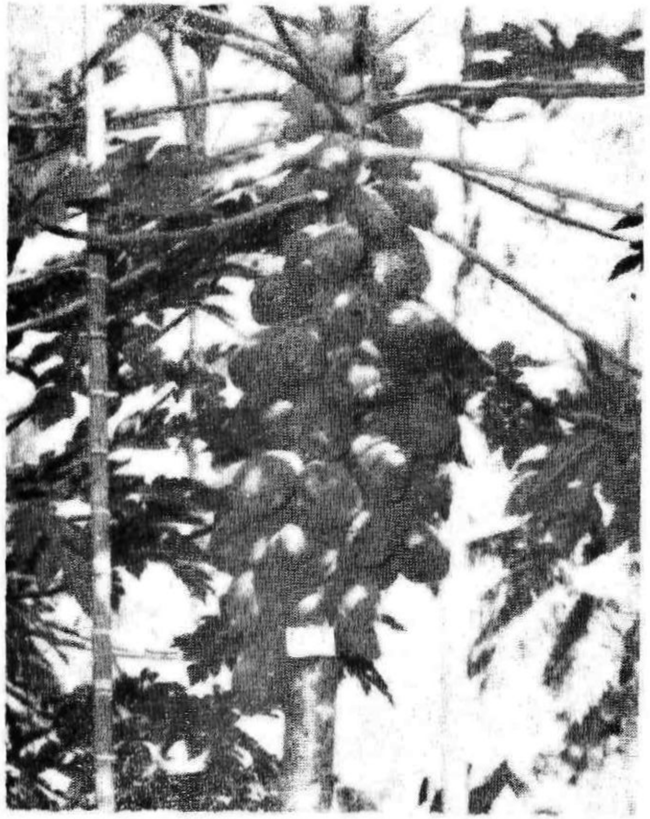
For effective control of mango hoppers, monocrotophos phosphamidon, methyl demeton, ethion, bhenthiocarb (all at 0 05%), dimethoate (0 06%) and carbaryl (0 2%) were really effective. Spraying can be initiated at the panicle emergence stage and sprays m y be repeated after 15 days interval, if hopper infectation is eevere.

Sapota

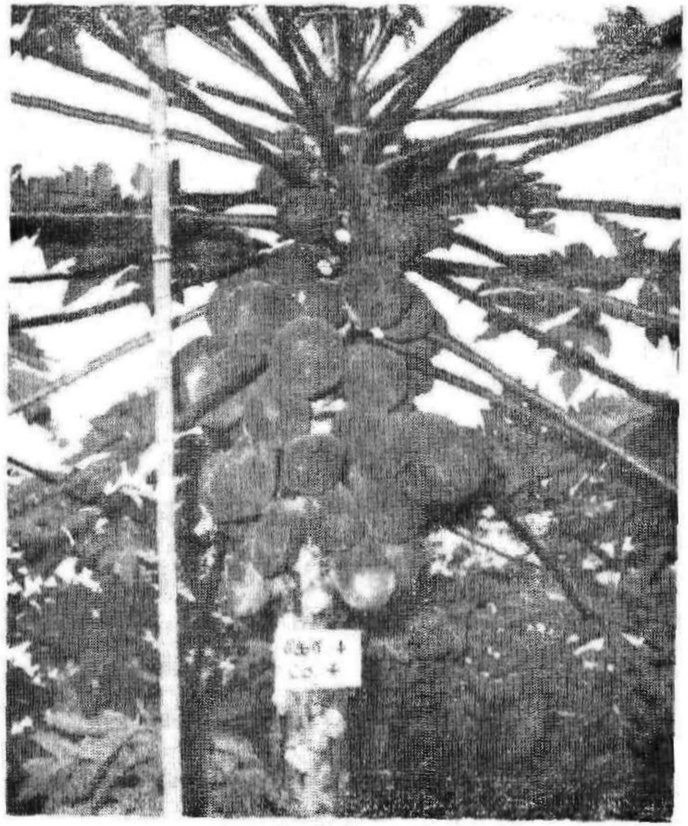
In PKM 1 Sapota spraying 0.1% boric acid, four times from the month of June at monthly intervals recorded 41% higher yield.

Guava

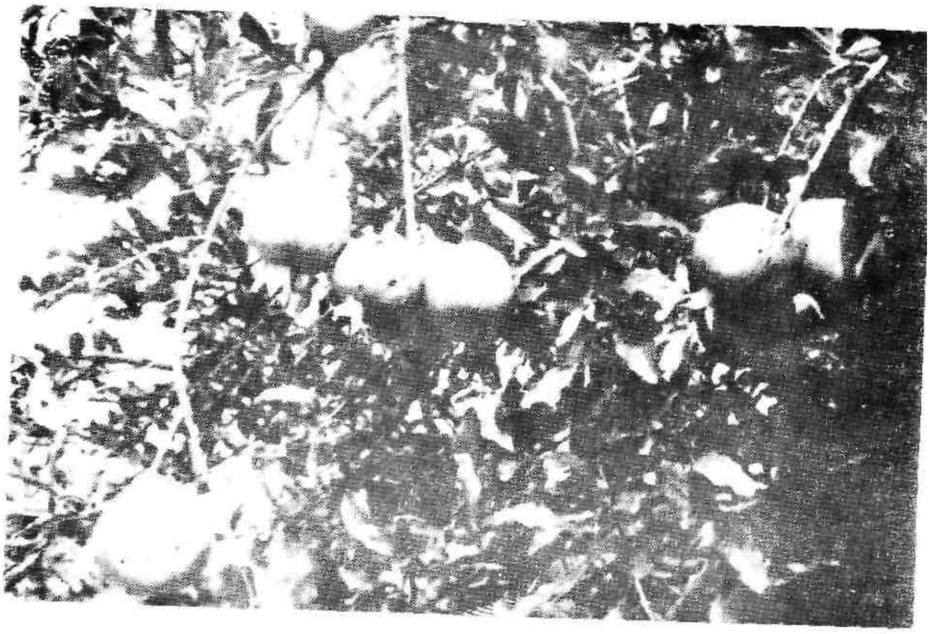
The waiting period for sprays against tea mosquito bug was found to be 9 days for monocrotophos and methyl parathion, 8 days for quinalphos and 3 days for phosalone.



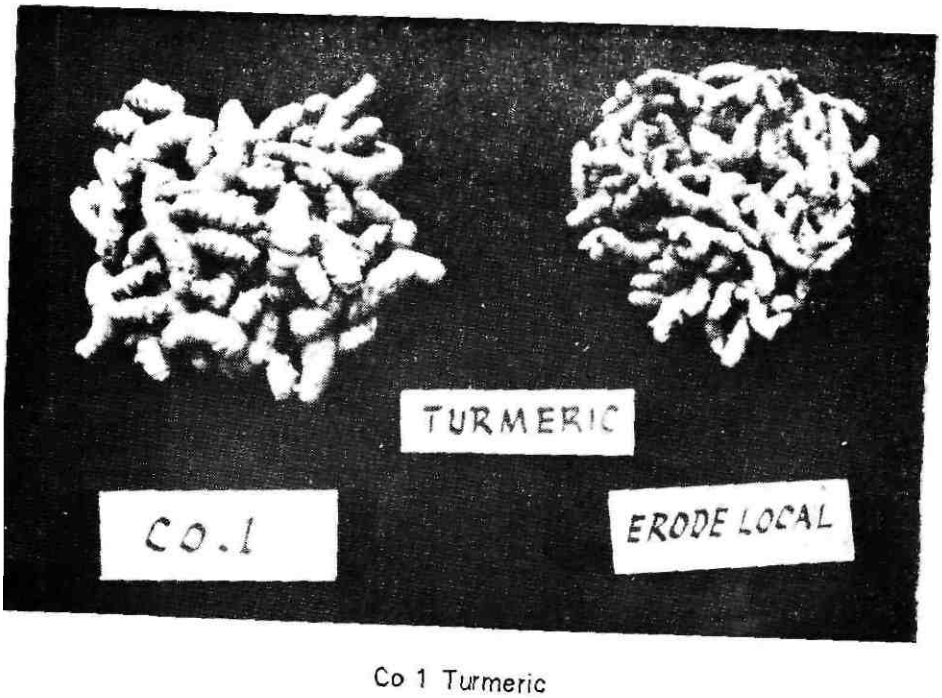
Co 3 Papaya



Co 4 Papaya



Co 1 Pomegranate



Co 1 Turmeric

Ber

At Periakulam, air layering of ber was successful. Significant rooting (86.7% success) was obtained within 60 days after treating the semihard wood twigs with IBA at 5000 ppm in lanolin paste. Budding techniques have been successful at Coimbatore.

Acid Lime

Crop Protection

Spraying of fenvalerate or cypermethrin (0.01%) was highly effective for the control of citrus leaf caterpillar.

Application of aldicarb or carbofuran or nemacur granules at 2 kg ai/ha twice in a year at 6 months interval effectively controlled the citrus root nematode.

The twig blight disease of acid lime could be effectively controlled by pruning the affected portion followed by spraying 0.3% copper oxychloride solution twice at monthly intervals.

Mandarin

Crop Management

Spraying ZnSo4 0.5%, twice in a year during the new flesh period, reduced chlorosis, produced bigger sized fruits and increased the yield by 70% over the control.

Application of 600 g N and 400 g K_2O per tree in two split doses during March-April and September-October along with 200 g P_2O_5 tree in a single dose in September-October registered the highest individual fruit weight (115 g) and highest fruit yield per tree (700 fruits).

VEGETABLE CROPS :

Tomato :

Crop Management :

Triacontanel enhanced the growth and development of tomato plants in general.

Crop Protection :

Foliar application of Captan (0.1%) on PKM. 1 tomato left an initial deposit of 39.2 ppm but later dissipated to 0.04 ppm 15 days after treatment.

Application of compost, mahua cake, and neem cake at 500 kg/ha one day prior to transplanting of Marutham tomato checked the population of Heliocotylenchus sp. and increased the fruit yield.

Foliar application of methionine at 1000 and 2000 ppm and phenylalanine at 2000 ppm on PKM. 1 was found to have inhabitory effect on the development of root-knot nematode.

Seed Technology :

Shade drying of PKM. 1 and Marutham tomato seed improved seed germination and seed vigour, compared to seeds dried under direct sun.

BRINJAL :

Crop Management :

Application of Farmyard manure at 12.5 t/ha with 50 N : 25 : 15 K kg (50% of the present recommended does) increased the yield by 23.6%, recording 52.4 t/ha in Co. 1 brinjal.

Crop Protection :

For Captan spary at 0.1%, the waiting period was found to be one day based on the tolerance limit of 25 ppm.

Drenching with phenamiphos 40 EC at 0.05% (1.74 kg ai/ha) 15 DAP was as good as the application of aldicarb 10% G at 1 kg ai/ha for the control of the root knot nematode.

CHILLIES:

Crop Management :

K1 variety showed the highest salt tolerance.

SEED TECHNOLOGY:

Drying Co 2 fruits under direct sun improved the quaiity of seeds.

Crop Protection :

Application of carbofuran (Furadon 3 G) granules twice at 25 kg/ha, once in the nursery 10 days before pulling out the seedlings and again at 15 DAP combined with potash application at 75 kg/ha in two split doses at 15 and 45 DAT effectively checked the spread of chilli mosaic disease.

Root dipping of seedlings in monocrotophos 0.05% gave good protection from sucking pests.

The white aphid could be controlled by two spayings of acephate 75 SP at 2 g/litre primicarb 1 ml/litre or FHC 350u1/1 ml/litre. For the chemical control of fruit borer, monocrotophos 0 1% penproparathion 0.05% and acephate 0.15% were found to be very effective.

Drenching nursery with phenamiphos 40% EC at 25 ml/sq.m prior to sowing followed by spot application of aldicarb (Temik 10 g) at 1.0 kg ai/ha 15 DAT was effective in reducing nematode infestation.

BHENDI:

Crop Management :

Application of potassium in the form of muriate of potash at 10 kg K_2O/ha in three 1% foliar applications on 30, 45 and 65 DAS was found to enhance the yield of Co.1 and Pusa Sawani by 10-11%.

Crop protection :

For foliar application of captan (0.1%) on Co 1 a waiting period of one day was enought considering 2 ppm as tolerance limit.

Spot application of phenamiphos 5% G at 0.5 g/plant (1.36 kg ai/ha) was found to be better than aldicarb 10% G at 0.2 g/plant 1 0 kg ai/ha) in the control of the nematode *Meloidogyne incognita*.

TAPIOCA:

Crop Management :

The intercropping studies at Coimba tore with six legumes revealed that blackgram as an intercrop caused 10% yield reduction in the main crop which was more than compensated by 556 kg of blackgram yield.

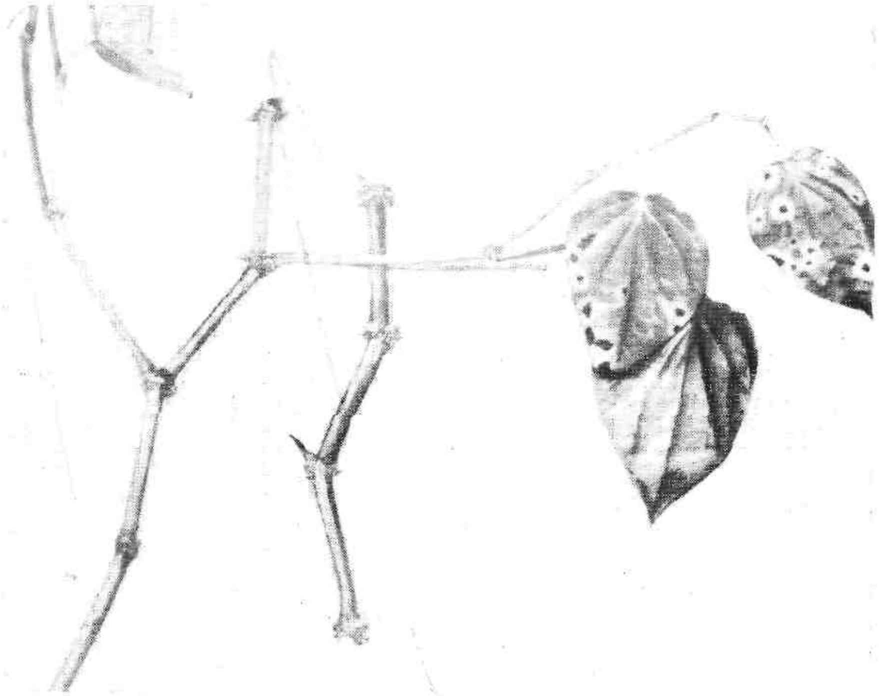
At Vridhachalam groundnut as an intercrop with tapioca fetched an additional return of Rs. 256/- ha under rainfed conditions.

Pea :

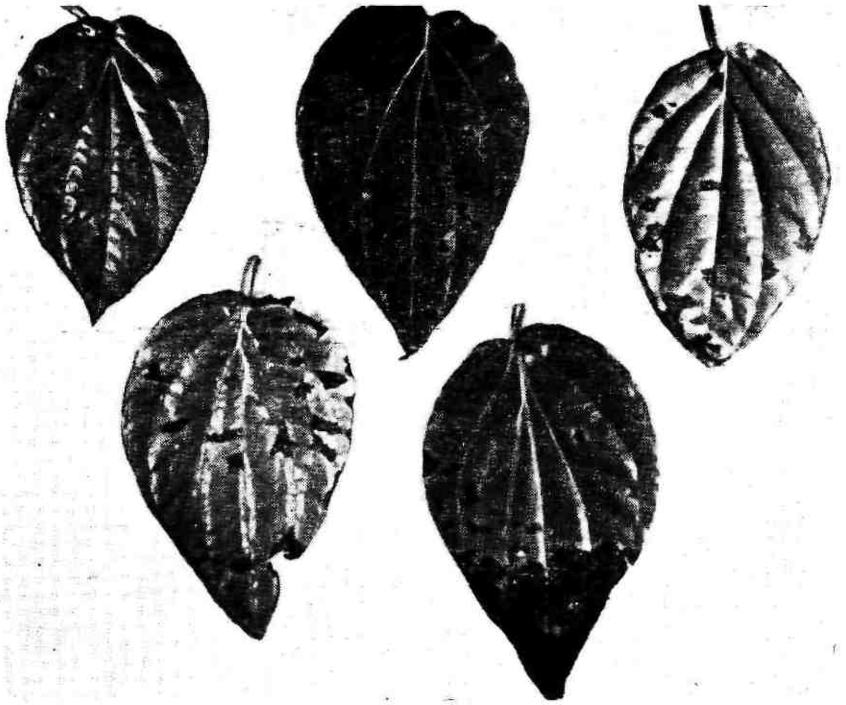
The sieve size for processing the seeds of Gloriosa was 18/64" round perforations.

Beans :

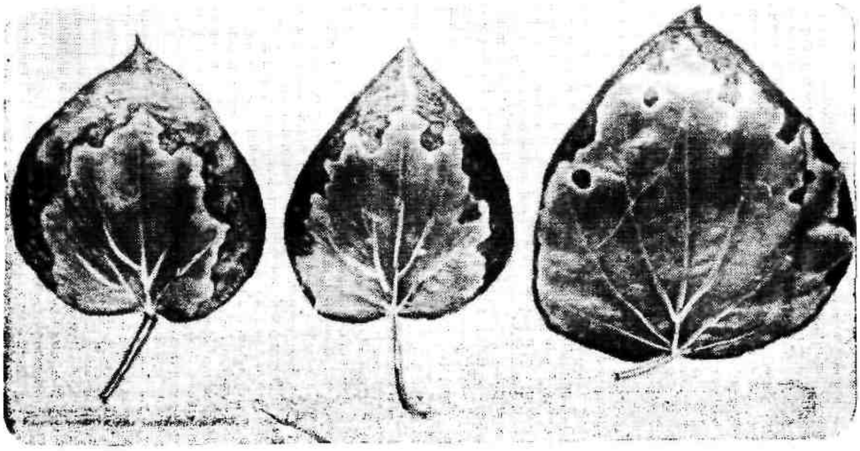
For increased production of good quality seeds in Premier grading of the seeds 16/64" round perforated seive could be recommended.



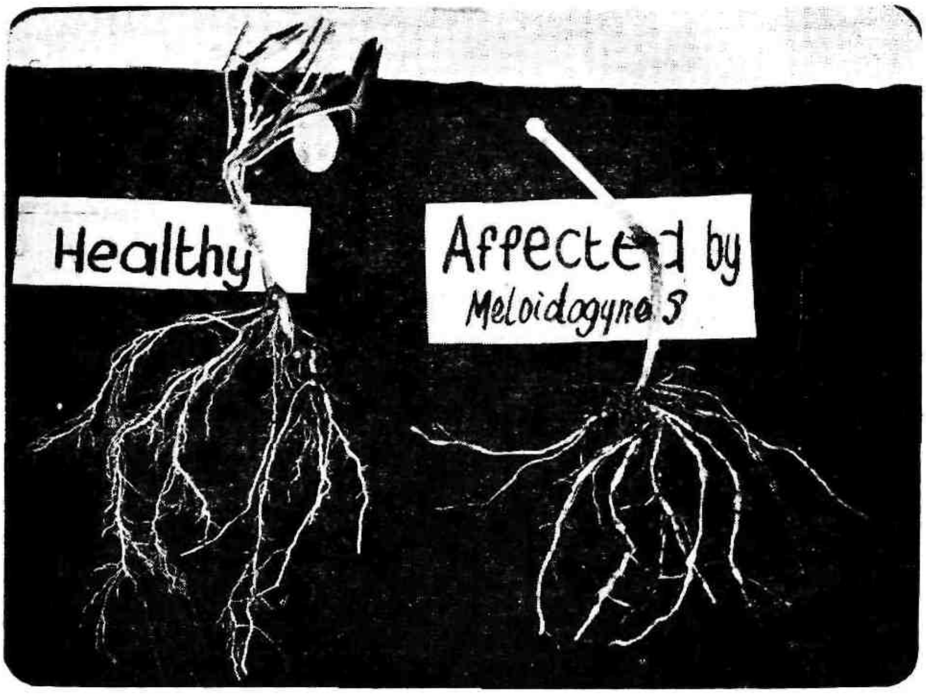
Stem Rot and Leaf Spot with Chlorotic Halo in Betelvine due to *Xanthomonas spp*



Leaf Spot and Blight in Betelvine Caused by *Xanthomonas spp*

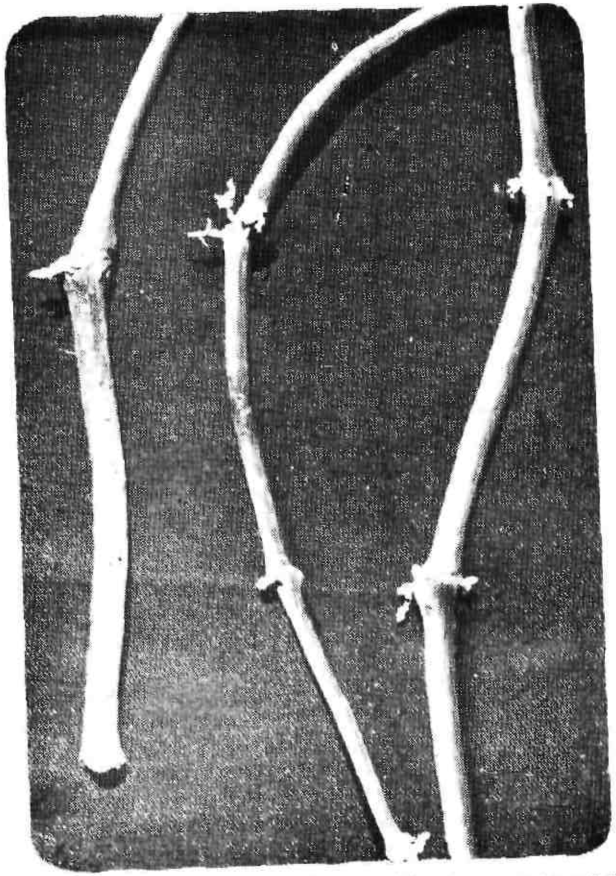


Marginal Blighting in Karpoori due to *Colletotrichum spp* (Theechal)



Root-Knot Nematode *Meloidogyne incognita* in Karpoori Roots

Breaking at Nodes due to Stemrot (Karunthaal)



Stem Rot in Betelvine Due to *Xanthomonas spp*
(Karunthaal)

FLOWER CROPS :

Chrysanthemum :

Crop Management :

In Hosur yellow. closer spacing of 30 x 20 cm recorded the highest yield of flowers.

SPICES :

Pepper :

Seed Technology :

The germination potential of pepper *seeds of cultivar panniyur-1 could be* increased when the seeds were extracted using concentrated HCl and given a pre-sowing treatment with 0.2% KNO_3 or ppm G.A.

Cardamon :

Crop Management :

A *spacing of* 180 x 180 *cm was found* to be optimum.

Turmeric :

Crop Improvement:

Co. 1 Turmeric : It is developed as a vegetative mutant through x-ray irradiation of Erode local at 5 KR. The dry rhizome yield *amounts to* 6.1 *t/ha. This mutant* will mature in 9 months.

Crop Management :

A fertillizer schedule of 1`0 N : 60 P : 60 K kg/ha *was adjudged as* the best fertilizer regime in LBP area.

Crop Protection :

Application of aldicarb at 1 kg/ha twice *in soil three and five months after planting effectively controlled the* root knot nematodes in Co. 1 turmeric.

Post-harvest Technology :

A farm level turmeric boiling unit has been developed by TNAU.

PLANTATION CROPS :

Arecanut :

Crop Protection :

In the insecticidal trial monocrotophos was found to reduce the incidence of the nut and fruit borer.

Coffee :

Spraying Ethrel at 530 ppm at 3/4 maturity stage hastened the ripening of coffee barries, thereby, reducing the number of harvest from 6 to 3 without reducing the yield.

Post-harvest-Technology :

A coffee grader has been fabricated.

Betelvine :

Crop Protection :

Spraying with plantomycin at 25 ppm level gave maximum control of stem rot, leaf spot and blight diseases.

Cacao :

Freshly extracted seeds gave maximum germinatation.

Palmyrah :

Crop Management :

In a trial on transplanting of palmyar seedlings the results showed that *degree of* the success was more under green house *conditions* compared to the open.

MEDICINAL AND AROMATIC PLANTS :

Catharanthusroseus (Vinca) :

Crop Management :

Application of 20 kg N, 10 kg P_2O_5 and 20 kg K_2O/ha as basal and NPK at 80:40.80 kg/ha as top dressing at four stages viz., 30, 90, 150 and 210 DAP gave the highest plant weight (6.33 g/plant).

Geranium :

Pruning the bushes at 20 cm height from the ground level leaving onebunch intact, fertilizing with 60 kg/ha each of N, P and K applied in two splits one at cutting time and the other after three months increased the foliage yield.

FORESTRY :

A comparison of growth vigour of Eucalyptus, Casuarina, Leucaena and Sesbania over a period of 9 months revealed Leucaena to be fast growing of the lot. However, Sesbania possessed maximum basal girth.

New tree sp cies capable of growing under limited rainfall (200 800 mm) in in extended rainless period of six to eight months and in degraded soils were identified for afforestation for fuel and fodder purposes.

FOOD SCIENCE AND NUTRITION :

Sweet potato flour was prepared from fresh tubers after removing the peels, drying the pieces either by mechanical means or by sundrying and grinding and sieving. The following recipewere developed.

Steamed products :

(a) Iddiappam (b) Pittu and (c) Kozhakatai (50% replacement with rice flour).

Fried products :

(a) Pakoda (b) Murukku (c) Omabodi and (d) Chapathi (50% replacement with wheat flour).

Bakery Products :

(a) Biscuits (50% replacement with maida) (b) cake (25% replacement with maida).

The recipes were evaluated organoleptically and were popularished through demonstrations and catches articles. A machine for chopping and distintegrating the tubers was designed, developed and tested for performance. The starch was separated by filtration and sedimentation process. The recovery of starch from sweet potato varied from 15 - 18% based on variety.

VETERINARY AND ANIMAL SCIENCES :

Cattle :

Semen preserved in Tris was found to have higher percentage of motility and live spermatozoa compared to semen preservation in lactose and CUE.

It wae observed that most of the livestock breeders were ready to adopt A. 1 for improving their cattle irrespective of their literacy level and social and financipl status.

A high degree of testicular degeneration was found to be a prime cause for the reproductive failure in breeding bulls.

Transplantation of good quality cud was found to be a therapeutic device to cure ruminal disorders of bovines.

Sheep and Goats :

Feeding of Koobabul (Leucaena leuco cephala) as a sole feed for sheep for one month did not result in any significant change in any of the parameters (body weight, weight of thyroid gland, liver, heart, spleen and skin).

Serological study on the incidence of toxoplasmosis in sheep breeds in Tamil Nadu revealed that 11.7% of the animals had antibodies for toxoplasmosis at 1:64 serum dilution by the Tox.H.A. test (the first record of the incidence of toxoplasmosis in Tamil Nadu).

The wool samples of Stavropol merino contained the highest grease content compared to other breeds.

Among the different genetic groups studied the Nilgiris groups produced the highest number of twins.

At Sandynallah, Pneumonia, enteritis and debility were the main causes for the mortality of breeds.

POULTRY :

In Meyer strain WLH chicken 50 per cent of the mortality was due to lymphmatosis in the 4th and 5th generations birds. The disease appeared to be inherited.

Inclusion of tapioca powder at 5% level in broiler ration worked out economically without affecting the growth rates and body weight.

Adding polmix 0 02% in the feed fed to 46 layers at the age of 60 weeks in a commercial unit for two weeks improved the production from 60% to 80%.

Incorporation of more than 2% mineral mixture in broiler ration was not economical.

The packages of practices for profitable broiler production are given below :

0-2 days - No mash - only broken maize, 150 g of glucose per liter of water + vitamin A 1 ml and B complex 15 ml for 100 chicks in 3 l of drinking water.

3-10 days - Broiler starter mash from 3rd day onwards. Bacterisol (0.5 g) in 1 l of drinking water.

17 - 21 days - Amprosol 20% powder 3 g in 10 1 of drinking water.

36th day - Finisher mash to be given up to marketing age.

38-42 days - Repeat amprosol in drinking water.

43-56 days - B complex 20 ml for 100 chicks in 5 ml of drinking water.

Livogen at the rate of 10 ml per day per 100 chicks in water will improve the returns to the farmer.

For tapeworm infection in poultry the following drugs were found to be effective :

(a) Di-N-Butyle tin dilaurate at the dose of 0.1 cc/bird.

(b) 'Niclosan' at the dose of 50 mg/bird

(c) 'Taenil' at the dose of 1 g/bird.

A survey on the helminth parasites on the ducks from the breeding areas of Chingleput and North Arcot districts and also from local market at Madras was carried out.

In Japanes quails there was no seasonal effect on egg weight and shell thickness. However, shape index, Haugų unit, albumin index and yolk colour were found to be significantly superior in Southwest monsoon season while yolk index was found to be superior in summer season.

It was found that diet with 22% CP with 2800-3000 KCal ME/kg or 24% protein with 2600 KCal ME/kg from 0 to 5 weeks of age and a diet containing 22% protein with 2600 KCal ME/kg from 6-8 weeks of age would be optimum for broiler chicken.

Addition of 0.2% BGA meal in the ration of broiler chicks resulted in heavier body weight at 8th week.

Acrosal route of inoculation of the lentogenic strain of RDV in chicks was found to be superior to other routes namely sub-cutaneous, internasal and drinking water methods.

The hazards of indiscriminate feeding of antibiotics to chicks were studied.

The RDV strain adapted to PKCC was found to have the qualities for a vaccine strain.

OTHER STUDIES :

The analgesic action of morphine sulphate was greater than that of pethidine hydrochloride and pentazocine lactate.

For restraining restless farm animals for diagnostic and clinical procedures like X-rays, assessment of age, castration, shoeing, surgery etc., Largactil, Siquil and Campose could be employed in the order of priority.

A simple and inexpensive debeaker was developed at the Livestock Research and Development Centre, Erode.

FISHERY SCIENCES :

Two earthern ponds of 0.10 and 0.15 ha size were stocked with the stocking densities of 5250 and 5000 respectively. While all the six species of Indian and *exotic carps were cultured along with* milk fish in both the pends, the species ratio was slightly altered. In one of the ponds murrel fingerlings were Introduced after the carps had grown to bigger size. The net fish production was worked out to be 5390 kg/ha/yr and 8445 kg/ha/yr for the stocking densities of 5000 and 5250 respectively. Silver carp registered faster gtowth in both the ponds, followed by catla. Among the *bottom feeders, common carp's growth rate* was less than that of mrigal. The milk fish. Chanos chanos included as an additional species registeed better growth rate when compared with other species like common carp and grass carp.

One hundred and twenty eight specimens of fresh water prawn measuring between 58 and 84 mm in total length were collected from Srivaikundam and Aathur river and were stocked in the nursery pond to study their growth. This species seemed to prefer diatoms, algal matter and crustacean and molluscan remains. The spawning started from north-east monsoon season. The fecundity varied from 10,000-18,500 eggs with length group 60-73 mm. The fecundity was found to increase with total length of the species. The protein content of the species ranged from 72.0 to 79.1 mg/100 mg on dry weight basis showing that M. idea is a highly proteinaceous prawn.

An artificial feed was prepared using trash fish flesh rice bran and groundnut oil cake in the ratio of 2:1:1. It was found that crabs (S serrata) fed with artificial feed gained an average live weight of 9.1 g/month. It was found that crabs reared in 25./. salinity recorded maximum growth.

Experiments on the culture of brime shrimp showed 25./· hatching rate. The survival rate of neuplii was as high as 70./·. The neuplii were fed with rice bran, Chlorella sp. organic detritus from salt pan area and algae from freshwater tank.

Feed	Survival ·/·	Growth rate (in 25 days)
Rice bran	65	0.9 cm
Chlorella sp.	89	1.1 cm
Organic detritus from salt pan	72	1.0 cm
Freshwater algae	15	0 8 cm

Two extensive single layered pens of each 12X8 m dimension were constructed using split bamboo poles and were installed in the brackishwater area at Pullavazhi. Brackishwater fish seeds belonging to Chanos chanos, Mugil cephalus, Sigamus canaliculatus, Etroplus suretensis Hemiramplus sp and Caranx sp. were collected from the adjacent areas and stocked in these pens at denisities 950 (I pen) and 970 (II pen). Etroplus surtensis was found to grow fast compared to other species.

Lobster cages and rafts were constructed for the culture of fishes and prowns and were suspended in the south breakwater of New Harbour. Penaeus indicus and P. semisulcatus were stocked at 250 numbers. They had grown to 28 g and 36 g respectively in a period of 4 months. The growth of lobster was recorded at 210 g in 8 months. An aerial trap (60' X 4.5') with 211 mesh for capturing mullet was fabricated. One foot of the trap will be above the level of water. Trial operations were conducted in Vaigai reservoir.

Sea weed samples were analysed for their chemical composition. Samples of Hormophysa triquetra, Gracillaria sp. Ulva letuca, U. reticulata, padina tetrastromatica, Sarganum wightii, Cauleroa racemost, C. scalpelliformis and Cystophyllum murigatum were analysed. They were found to have 6.0 to 16.5./· protein, 0.8 to 1.8./· fat, 0.03 to 0.24·/. iron and 0.1 to 0 3./· phosphorus.

The 43' fishing vessle 'Dolphin' was used for survey. Four fishing grounds were identified for prawn and fishes. Two trawl nets namely, bottom trawl and fish trawl were used for fishing. In fish trawl the catch was more compared to bottom trawl.

The microbial population of bacteria, fungi, actinomycetes and sulphate reducing bacteria present in the effluents from cooling towers of both urea and ammonia plants of SPIC was estimated. The discharge water contained very many micro-organisms which were effectively reduced by the application of biocides. Pot culture studies with the efflnents showed that rice, ragi, maize, sorghum and pearl millet could grow when the effluents were diluted by 20% It was found that 45 to 50 times diluted effluents had no adverse effect on the survival of Penaeus semisulcatus.

For proper monitoring and development of fishery resources of Tuticorin Bay, eggs and larves of fin fishes were collected from two stations. Eggs beloging to Mug l cephalus, Cynoglosus sp. and Sardinella sp. fishes were identified.

It was observed that January to August was to be the spawning season for Mugil cephalus, Kowala coval, Thryssa sp. and Sardinella sp. The laboratory culture of the flat head Thyssenophrya indicus showed that It took 10 days to reach the juvenile stage.

A new fishing ground for the sea cucumber Holothria rubens was identified.

A book on "Sanga Ilakkiathil Meen-valam" was complied. Tilapia exposed to various light sources such as green, blue, orange and red showed significantly better growth than when exposed to green light.

The SPIC effluent was studied for its safe limit for Crassostrea madrasensis, Chanos chanos, Mugil cephalus and Penaeus indicus. The effluent had to be diluted 21.7 to 33.5 times with sea water. However, under safe limit, the fishes were suffering due to hyperplasia. The break water of Tuticorin results in the blackening of the gills of most of the species. The bottom sediment of the fishing harbour contained exchangeable copper in the form of cupric sulphide, the product of sewage pollution.

The energy flow studies carried out in Kcrampallam lake indicated that the productivity was low in summer and high during monsoon. The presence of hydrogen sulphide, low oxygen level, very high concentration of ammonia and high turbidity were the adverse factors found to endanger the biotic components. The semi-enclosed nature of this harbour highly restricted tidal flushing, thereby aggravating the condition. Sewage sea water mixture was observed to be lethal to many shell and fin fishes even at 20%. Since phosphorus is the limiting nutrient in many freshwater systems, sewage nutrients seemed to enhance the growth of blue green algae like Spriulima sp. and Oscillotoria sp. Sewage, when partially oxidised, well supported the rich growth of algae, provided micro nutrients were supplied intermittently. Partially oxidised sewage underwend organic decomposition simultaneously meeting the demand by the algae for major plant nutrients and particularly phosphorus.

CENTRE FOR AGRICULTURAL AND RURAL DEVELOPMENT STUDIES :

Agricultural Economics :

The cost of production of turmeric in Coimbatore and Periyar districts varied from Rs. 115/q to Rs. 220/q. The productivity ranged between 37.0 q/ha and 73.3 q/ha

The evaluation of the performance of Farmers' Service Co-operatives revealed that the societies, surprisingly, continued to function more as Multipurpose Co-operatives rather than as Farmers' Service Cooperatives.

In the Pilot Project for Optimization of Resource - Use for Farm Development, optimum farm plans were formulated

The Land Colonisation Co-operatives in Chinnaselam end Kottampatti Panchayat Unions for Adi-Dravidars have achieved the social objectives assigned to them. Constitution of technical committees consisting of officials of Agriculture, Co-operation and Revenue Departments will go a long way in helping the societies to have a sound planning of their functions

A Techno - Economic Survey for the Development of Horticulture was taken up in Dharmapuri district covering four major fruit

crops, viz., mango, guava, grapes and tamarind. The average cost of production per kg of mango was Rs. 0.70 in the age-group of 5-15 years, Rs. 0.35 in the age-group of 16-30 years and Rs. 0.20 beyond 30 years. The cost of production per kg of Anab-E-Shahi was Rs. 0.60, 0.70, 0.90 for the age groups of 2-5, 6-10 and 10-15 years respectively. The corresponding figures for Bangalore Blue were Rs. 0.60, 0.70 and 0.85 and for Pachadraksha Rs. 0.55, 0.65 and 0.80 The cost of production of tamarind was Rs. 0.15/kg in the age-group of 10-25 years and Rs. 0.10/kg in the age-group of over 25 years. The cost of production of guava was Rs. 0.30, 0.20 and 0.10 respectively for the age-groups 3-7, 8-12 and 13-20 years Krishnagiri, Bargur, Veppanapalli, Uthangarai Dharmapuri, Nallampalli and Pennagaram were the ideal localities for expanding the cultivation of mango, For guava, Hosur, Krishnagiri and Harur taluks were suitable. The forest area of Denkanikotta taluk could be utilised for expanding area under tamarind.

The second phase of the Social Forestry Project in Tamil Nadu was completed The survey covered Coimbatore and Periyar districts. Coconut, fruit trees, Eucalyptus and Casuarina were the coice crops among the respondents. Social forestry in irrigation tank foreshores met with resistance from the local people. Contrary to the expectation forest products were diverted to paper mills leaving local people in continuing scarcity and high cost of fuel.

The study on the problems in production and marketing of brinjal in Madurai district revealed that none of the respondent farmers had grown Co. 1 or MDU. 1 due to lower market price compared to local varieties. The average productivity worked out to 27.6 t/ha with the coefficient of variation of 21.7%. The output-input ratio came to 1.25. The producers' share in the consumers' price was found to be 53.9 to 57.7%. The important policy implications were i) the need for breeding varieties with consumer appeal ii) rational use of fertilzers and chemicals and iii) formation of a vegetable growers, association.

In another study conducted in Ramanathapuram district the factors affecting off-farm labour supply were identified as i) the age of the respondents ii) schooling years iii) family labour force iv) caste v) the ratio of net farm income to total income and vi) cropping intensity.

The Techno-economic survey Tirunelveli district revealed i) the scope for extending cultivable area ii) high degree of yield instabiity in cotton, cholam and cumbu crops in the past 26 years iii) the scope for further exploitation of groundnut water resources iv) starting of palmyrah based industries v) further exploitation of marine fisheries and vi) introduction of sericulture.

The possibilities for the developmevt of horticulture in Madurai district were explored. The cost of production of grapes (muscot variety), mendarin orange, guava (red fleshed and white fleshed) and mango (Bangalura and Neelum varieties) came to Rs. 1.75, 0.15 0.40 and 0.15 respectively. Incidence of pests and diseases, non-availability of cheap credit and laok of knowledge on improved cultivation practices were the main production problems. The major marketing problems were the prevalence of unorganized market structure, wide fluctuations in price and high marketing costs

Introduction of dwarf mango varieties; rootstock studies on grapes and mandarin orange; dwarfing guava varieties; varietal improvement of grapes; evolution of short duration tapioca and varietal improvement cf crysanthemum and tomato were suggested for the development of horticulture in in Madurai district.

Agricultural Extension :

The role performance of formal leaders of village organizations (Panchayats, Cooperatives, Schools) in relation to agricultural development was studied. The non-officials of village Panchayats played their role effectively as group spokesmen, discussion chairman, superivisors, executors, organisations of group ideas and planners compared to those of the other two organisations. The school teachers experessed their desire to undergo training in agriculture.

The study on the factors for the adoption rejection of Tamil Nadu Agricultural University rice and sorghum varieties conducted in Madurai district revealed that farmers' awareness with regard to Co.41 and Co.42 rice varieties was poor. Forty eight percent of the respondents were non-adopters of Bhavani variety. Fifty per cent of the adopters discontinued the variety subsequently due to poor yield, crcp lodging, pests and diseases and non-availability of seeds. Twenty two percent of the respondents adopted Co.36 variety. It was discontinued later owing to lesser yield, compared to Cc.33 and ADT.31 varieties, the long duration of the varietv posing irrigotion problems and non-availability of seede. Twenty nine percent of the respondents did not adopt Co 37 variety. Forty five percent of the adopters dropped this variety in the subsequent seasons due to lesser yield, crop lodging and longer duration compared to Co.33. With regard to sorghum farmers' awareness of Co 23 and Co.24 varieties was poordue to non-availabilitv of seeds and risk aversion. Sixty four percent of the farmers adopted Co.21 and later, 20% of them discontinued its adoption, due to pests and diseases, unsuitability of stalks for feeding livestock and non-availability of seeds. Thirty nine percent of the growers did not adopt Co 22 One fourth of the adopters dropped the variety due to poor grain and straw yield compared to Co.21 and low price.

The study on factors contributing to the success or failure of schemes with similar objectives conducted in Sivakasi and Aruppukottai areas identified the following factors : i) Officials' interest in implementation and follow-up ii) People's conviction about the suitability of the scheme to their area iii) infrastructural facilities to support the scheme iv) continuous availability of inputs and v) propaganda before implementation.

The study on pest management practices conducted in Theni and Periakulam Panchayat Unions brought to light the following observations :

i) Rice growers realised that stem borer, leaf roller and blast were the major problems ii) cotton growers pointed out the menace from bollworms, stem weevil and black arm. In riee crop protection, farmers preferred the pesticides Rogor, Dimecron and Dithane Z. 78 due to effective and simultaneous control of pests and diseases and easy availability of the

chemicals. In cotton crop protection, Nuvacron, Parathion, Thiodan and Ekalux were frequently used due to quick breakdown effect of the chemicals and then easy availability. The local dialects for the pests and diseases of cotton and rice were compiled.

In another study conducted in Thirumangalam Panchayat Union the reasons attributed for larger adoption of KM. 2 hybrid bajra were identified as i) non-season bound nature ii) high yield iii) short duration iv) more number of tillers v) good quality of grains vi) drought resistance and vii) more grain setting.

The performance of the Palmyrah Tappers Rehabilitation scheme of DPAP in Ramanathapuram district was evaluated. The finding was that over 75% of the beneficiaries were aware of all the objectives of the scheme.

Tissue Culture Unit:

Another cerived lines of ASD. 8 x Co. 38 and ASD. 8 x Co. 39 developed in the Tissue culture Laboratory are being multiplied at the Paddy Breeding Station, Coimbatore, to test their homozygosity, yield and other agronomic characters. In a programme carried out in collaboration with IARI seven lines were developed from the anther derived homozygous diploids from Rasi x Co. 40 Vaigai x Co. 40. The lines are being tested at the Paddy Breeding Station, Coimbatore.

SERICULTURE:

The hybridisation work started by crossing U. 8 x T. W. for evolving bioltin line with multivoltine character in respect of its hatchability was continued. Tender leaf feed increased silk output. Azotobacter inoculation increased the yield of mulberry varieties Kanva-2 and MR-2 compared to Azospirillum.

5. EXTENSION EDUCATION

To bridge the gap between the lab and land the Directorate of Extension Education functioned through various communication channels and extension methods.

MASS MEDIA:

Radio Programme

Using recording facilities available at TNAU the Communicatiho Centre recorded 52 timee agricultural news reels, 'Agri-cultural News flashes' and 'Mset the Scientists'. Besides, 18 'New releases', 10 'questions and answers', 26 'a-day-a fruit', 4 'a-day-a-tree' programmes were also initiated. Further 177 radio broadcasts have been mady by other centres of TNAU.

Print Media

The research findings of the University were disseminated through newspapers and journals. About 130 articles have been published by various TNAU Centres. The Tamil Journals 'Valarum Velanmai' 'Kalnadai Kathir' were published. The 'Newsletter' of the University was also published regularly. A number of books and booklets were published by the University, the details of which are given in Appendix. II.

Correspondence Courses

The following 12 correspondence courses were offered and 153 farmers were benefited.

1. Sugarcane cultivation
2. Sericulture
3. Dryland farming
4. Grapevine cultivation
5. Soil and Water Conservation
6. Farm budgeting
7. Tractor maintenance
8. Turmeric cultivation
9. Dairy farming
10. Banana cultivation
11. Flower cultivation
12. Millet cultivation

Farm School on A. I. R.

Fifty two lessons on 'Mixed Farming' were broadcast benefiting 183 farmers. A coursa on 'Agricultural Management' comprising of 13 lessons was offered by the Vice-Chancellor January to March '83 and 245 farmers were benefited.

Group and Individual Methods

Synchronised slide were prepared on 18 newly released varieties in two series and were screened for the benefit of extension workers and farmers. These slides were duplicated and supplied to the extension centres of the University.

Answering Farmers' Questions

The Communication Centre has answered 3452 queries received through letters from farmers. The other centres of TNAU have sent replies to nearly 9000 letters.

Exhibition

Twenty - eight exhibitions on the improved practices and innovations have

The Adopted Farm Families visit Tamil Nadu Rice Research Institute's Farm

All India Seminar on Agro-Industries for Rural Development at Coimbatore on *July 30-31, 1982*

State Level Training Programme on Rice Production Technology at Tamil Nadu Rice Research Institute, Aduthurai on December 20-23, 1982
Dr. V. D. Gurusamy Raja, Professor and Head, speaks

Inauguration of National Seminar on Seed Pathology, December 30, 1982

Skill Demonstration to Lab-to-Land and village Adotion Beneficiaries at Tamil Nadu Rice Research Institution, Aduthurai

Students Participating in Rat Control Campaign Organised by Krishi Vigyan Kendra, Coimbatore

Demonstration of New Cotton Technology at Tamil Nadu Rice Research Institute, Aduthurai

Krishi Vigyan Kendra, Madurai organising Solar-Cooker Demonstration at Iyyanampatti Village

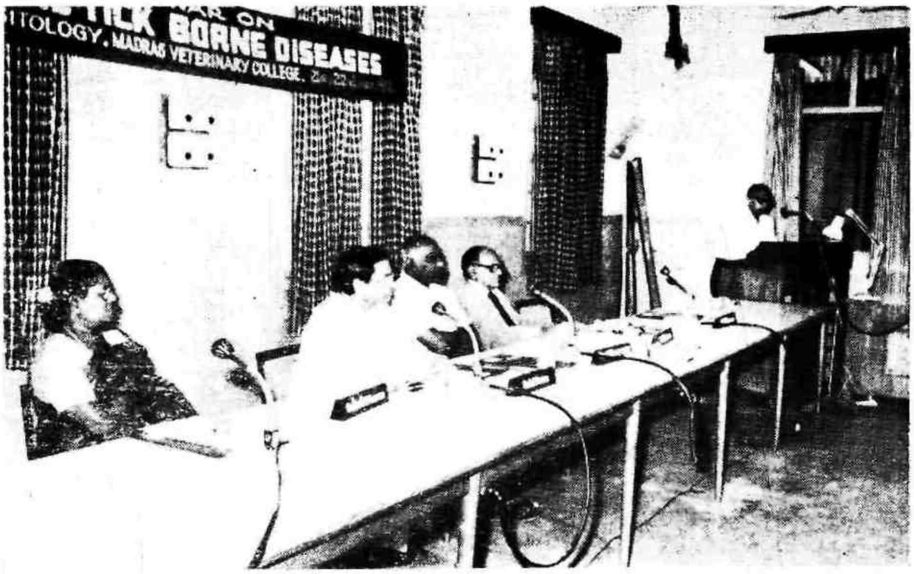
Rice Reaper Demonstration for T & V Staff at Tamil Nadu
Rice Research Institute, Aduthurai

Krishi Vigyan Kendra, Madurai Organising Rice Parboiling Unit Demonstration
at Iyyanampatti Village

Field Testing of Pulse Thrasher

Method Demonstration on Stem Injection in Coconut

Regional Workshop on Rice Fallow & Commercial Crops at
Tamil Nadu Rice Research Institute, Aduthurai, on March 21, 1983.
The Joint Director of Agriculture (T&V). Thanjavur Inaugurates



Seminar on Ticks and Tick Borne Diseases at Madras Veterinary
College, on March 21-22, 1983

Exhibition conducted on Farmers' Day on August 11, 1982 at the Livestock Research Station, Kattupakkam. The Vice-Chancellor looks at an exhibit

The Vice-Chanceller visiting the exhibition on Farmers' Day Conducted by the Farmers' Training Centre, Kattankolathur

The Vice-Chancellor plants a sapling at the Livestock Research Station, Kattupakkam, on Farmers' Day on August 11, 1982

Farm Women Trainees noting down particulars from the Exhibition hall of the Farmers Training Centre, Kattankolathur

Chingleput district farmers visiting Sheep Breeding Research Station, Sandynallah, during their tour organised by the farmers' Training Centre, Kattankolathur

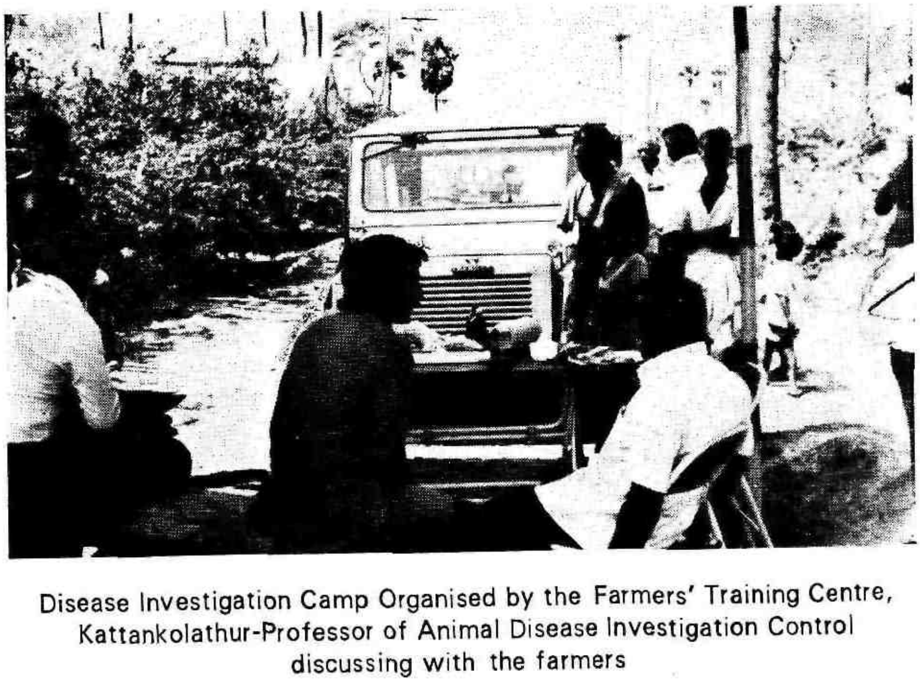
Mass Contact Programme conducted by the Farmers' Training Centre, Kattankolathur

Mass Contact Programme Conducted by the Farmers' Training Centre, *Kathankolathur at Vengaivasal, Chingleput District*

New Method of Transplanting Palmyrah Seedlings Explained to Hon'ble Minister for Public Works Thiru. S. N. Rajendran on November 18, 1982 at Srivilliputhur

Mass Contact Programme conducted by the Farmers' Training Centre *Kattankolathur*

New Method of Transplanting Palmyrah Seedlings Explained to Hon'ble Minister for Public Works Thiru. S. N. Rajendran, on November 18, 1982 *at Srivilliputhur*



Disease Investigation Camp Organised by the Farmers' Training Centre, Kattankolathur-Professor of Animal Disease Investigation Control discussing with the farmers

been organised by the TNAU centres. The Communication Centre participated in two district exhibitions.

T. V. Coverage

Under "Veedu Thedi Varum Velanmai Kalvi" programme of Doordarshan Kendra, Madras 28 lessons on cultivation of Paddy (Samba and Navarai) Groundnut, Cotton, Pulses and Millets were provided by the University. Six feature programmes covering the achievements of TNAU were filmed for T. V. at TNAU.

Farmers' Day

Farmers' Day was organised in different centres and the details are given hereunder :

Centre	Date (s)	No. of Participants
K. V. K., Coimbatore	22-1-83 (&) 23-1-83	750
R. R. S., Paiyur	16-12-82 (&) 21-3-83	850
K. V. K. Madurai	6-2-83	2000
K. V. K., Pondicherry	3-2-83	400
T. R. R. I., Aduthurai	24-9-82 (&) 20-3-83	700
F. T. C., Kattankulathur	11-8-82	400

Training Programme

The TNAU has nominated a team of Scientists in each of the 15 districts for participation in the monthly workshops of the T&V system. Sixty-eight zonal workshops were conducted at different centres of the University to present the appropriate innovations and practices to the department subject matter specialists.

Farmers' Training Programme :

The Krishi Vigyan Kendras, Plant Clinic Centres and other Regional Research Stations have conducted 97 on-campus, and 114 off-campus, trainings to farmer, farm women, unemployed youth, school teachers, school drop outs, etc. During the year more than 8,00 participants were trained.

Demonstrations

The extension centres, located in different parts of the State conducted 117 method demonstrations and 103 result demonstration in the fields of farmers to convince them of the utility of TNAU innovations.

Inservice Training Programmes

A total of 238 in-service training pro grammes on agriculture, horticultur animal husbantry, engineering and foresti was conducted for extension functionari of the State Departments of Agricultur Horticulture, Oilseeds, Animal Husband and Fisheries, school teachers, pre-relea defence personnel, probationars IA officers, Deputy Collectors, Deputy Regi

trars of Co-operative Societies, Railway staff and Nationalisep Bank Officers.

Lab-to-Land Programme

The first phase of Lab-to-Land Programme was implemented in seven TNAU centres viz, Krishi Vigyan Kendras at Coimbatore, Madurai, Trichy and Pondicherry, Regional Research Stations at Paiyur and Vridhachalam and Tamil Nadu Rice Research Institute, Aduthurai. In the first phase, 3000 families were adopted under the programme which ended on 30 5-82. In the second phase commencing on 1-6-82, the same 7 centres adopted 4000 families. The programme envisages supply of seeds, fertilizers, goats, sheep poultry and piggery to the small and marginal farmers and landless labourers. In the Lab-to-Land Programme I phase, the farmers of the selected villages were educated to do the improved farming. This educational component has yielded very encouraging results.

Village Adoption under New 20 Point Programme

Eight TNAU centres viz., the Krishi Vigyan Kendras at Coimbatore, Madurai, Trichy and Pondicherry, the Regional Research Stations at Paiyur and Vridhachalam, Tamil Nadu Rice Research Institute, Adu hurai and National Pulses Research Centre, Vamban, Pudukkottai have adopted 10 villages under the 20 Point Programme. For Agricultural Labourers under Animal Husbandry Programme, Mecheri sheep (60 ewes and 3 rams) were distributed by the Kumaraperumal Farm Science Centre, Trichy. Milch animals were vaccinated against foot and mouth disease and veterinary aid was also given by National Pulses Research Centre, Pudukkottai. Under fisheriss programme 3000 fingerlings were released in Thindiyur village by Krishi Vigyan Kendra, Madurai.

National Demonstration Scheme

National Demonstration scheme functioning at Vellore, North Arcot district, laid out 8 rainfed demonstrations, 7 multiple cropping demonstrations and two entire farming system demonstrations covering poultry farming besides crop and fruit. The demonstrations were laid out by Scientists in selected farmers' holdings to show the worth of TNAU innovations (new crop varieties and production technology) to the neighbouring farmers and also to the villagers. Farmers' meetings exhibitions, field days and farm days were conducted in the villages.

Plant Clinic Centres

The three Plant Clinic Centres continue to function at Vellore, Kancheepuram and Tirunelveli. Scientists in these centres periodically visit different holdings, identify the pest/disease problem and suggest suitable solution/control measures. They also arrange for mass ground spraying wherever necessary. These centres disseminated the TNAU innovations through All India Radio and Press.

Special Schemes

The IRTPO Scheme extension centres are functioning at Vridhachalam, Aduthurai and Kovilpatti. They undertook the extension activities relating to Pulses and Oilseeds.

An ICAR scheme for upliftment of scheduled caste and scheduled tribes at Aruppukkottai has been launched as a pilot project. Under this scheme, villages having

more than 50% of scheduled caste population have been selected. The appropriate technologies have been identified for transfer to improve the standard of living of the target groups.

Multi-location Trial II and Adaptive Research Trials

Promissing cultures in various crops selected in consultation with the concerned breeders are evaluated in farmers' holdings by i) the TNAU Scientists in the various centres as Multi-Location Trial. and ii) by the Extension personnel of the State Departments of Agriculture and Oilseeds as Adaptive Research Trials.

In 1982-83 a total of 41 cultures (3 in paddy, 12 in millets, one in maize, 8 in cotton, 9 in pulses and 8 in oilseeds) were evaluated in farmers' holdings through Adaptive Research Trials and multi location trials were organised in 953 locations.

The performance of the promising entries is abstracted in Annexure I

Breeder Seed Production

During 1982-83, the following quantities of Breeder seeds were produced in TNAU centres for meeting the requirements of State Development Departments and farmers.

Crop	Target (kg.)	Production (kg.)
Paddy	11,765	16,590
Millets	1,000	2,343
Pulses	20,000	34,042
Groundnut	10,000	14,697
Sunflower	—	3,500
Cotton	6,000	3,065
Vegetables	—	175

ANNEXURE

ART/MLT II RESULTS OF 1982-83

1. Paddy - Kanyakumari district

a. Comparison of TP 1974 Vs Ponni and IR 20.

Statistical analysisr evealed that TP 1974 is significantly superior to Ponni and on of bar with IR. 20.

b. As-19789 Vs TKM. 9 and ADT. 31.

TKM. 9 is found to be significantly superior to both As 19789 and ADT. 31. However, AS 19789 has significantly recorded better yield than ADT 31.

2. Sorghum - Tirunelveli Kharif crop

Varieties KS 4480 and 4355 were found to be significantly superior to CO 23 and K 4 with regard to yield. KS 4480 and KS 4355 were on par with each other.

3. Cumbu - South Arcot, Trichy, Salem & Dharmapuri

UCH 9 UCH 10 were found to be significantly superior to X 4 and KM2 but they themselves were on par with each other.

4. Pulses a) Lablab, Mutant - 3, Co 6, Co 7, Co 8 and Co 9

Mutant 3 was found to perform well in Pondicherry and Co 8 in Tirunelveli. However, on the whole the varieties were on par when studied in locations over 5 districts.

b) Bengalgram - Co G3 and Co 2

CoG2 and Co 2 were on par. However, Co G2 outyielded (more than double) Co 2 in a particular location in Dharmapuri.

c) Redgram - DPI 1711, S - 14, Co 4 and Co 2

Co 4 performed well and was superior to all the other varieties in the districts of Pudukkottai, Periyar, Pondicherry and Madurai. But the performance of the variety was not as expected in Pudukkottai district.

APPENDIX - I

List of Schemes

UNIVERSITY RESEARCH SCHEMES - NON-PLAN

		Revised Estimate 1982 83
1	Scheme for improvement of groundnut through induction of mutation, Coimbatore.	61100
2	Scheme for surveilance of pests and diseases, Vellore	96400
3	Scheme for studies on the residues of pesticides in plant and soil, Coimbatore	166100
4	Scheme for establishment of research wing for rodent control in deltaic areas, Aduthurai	36800
5	Scheme for research on citrus die - back, Tenkasi	103700
6	Scheme for research on citrus die - back, Coimbatore	24300
7	Scheme for intensification of pulses research, Vamban	103900
8	Scheme for improvement of redgram and soybean, Vamban	99200
9	Scheme for evolution of cumbu resistant to greenear, Vamban	97400
10	Scheme for evolution of cumbu resistant to greenear Kovilpatti	88900
11	Scheme for maximisation of pulses production, Vamban	210900
12	Scheme for improvement of millets for grain and fodder Kovilpatti	91300
13	Scheme for improvement of sunflower in Tamil Nadu, Kovilpatti	134800
14	Scheme for improvement of wetland pulses, Aduthurai	95200
15	Scheme for coordinated agronomic experiments on sugarcane, Villupuram	201200
16	Scheme for coordinated agronomic experiments on sugarcane, Trichy	208200
17	Scheme for research on nematode parasites of sugarcane crop, Cuddalore	95400
18	Scheme for Crop constitution studies. Kancheepuram	14300
19	Scheme for Crop substitution studies, Trichy	22200
20	Scheme for biological testing of pesticides laboratory, Vamban	39900
21	Scheme for biological testing of pesticides laboratory, Kovilpatti	34600
22	Scheme for biological testing of pesticides laboratory, Aduthurai	58700
23	Scheme for biological testing of pesticides laboratory, Tindivanam	46300

UNIVERSITY RESEARCH SCHEMES - PLAN

1	Scheme for reserch on utilisation of agricultural waste for making paper, paper products and chipboards	76600
2	Scheme for biological control of crop pests, Coimbatore	42800
3	Scheme for biological control of crop pests, Madurai	15200

4	Scheme for research on the improvement of tapioca, Vridhachalam	30500
5	Scheme for research project on breeder seed increase, Bhavenisagar	1[illegible]5 00
6	Scheme for studies on standardisation of seed production and seed storage techniques in tropical vegetables, Bhavanisagar	81000
7	Scheme for studies on standardisation of seed production and seed storge techniques in tropical vegetables, Coimbatore	24500
8	Scheme for genetic potential of rice dwarfs, Coimbatore	25100
9	Scheme for establishment of foliar diagnosis laboratory, Coimbatore	39000
10	Scheme for studies on agricultural climatology, Coimbatore	46100
11	Scheme for improvement of Chrysanthemum and marigold for fresh flower trade, Madurai	39300
12	*Scheme for research on heterosis breeding in Vegetable crops, Coimbatore*	32200
13	Scheme for investigation on the microbiology for increased *production under dry farming system, Madurai*	26800
14	Scheme for strenghening and coordinating rice entomological research, Coimbatore	139200
15	*Scheme for strengthing and coordinating rice entomological research, Madurai*	49400
16	Scheme for strengthening and coordinating rice entomological research, KVK, *Pondicherry*	31000
17	Scheme for development of Rhizobial strains suitable for the legumes of saline and alkali soils of Tamil Nadu, Coimbatore	7000
18	Scheme for operational research on the control of blackheaded caterpillar on coconut, Madurai	18000
19	Scheme for operational research on the control of blackheaded caterpillar on coconut, Salem	2200
20	Scheme for establishment of Plant Clinic Centre, Vellore	80100
21	Scheme for establishment of Plant Clinic Centre, Tirunelveli	61000
22	Scheme for establishment of Plant Clinic Centre, Kancheepuram	42400
23	Scheme for developing suitable spraying and dusting systems for cotton and tall sorghum varieties and for developing liquid injector for rice	28000
24	Scheme for development of sugarcane varieties suitable for southern districts of Tamil Nadu, Madurai	75500
25	Scheme for physiological assessment and improvement of yield in Thaladi and Samba rice in Tanjore delta, Aduthurai	21600
26	Scheme for development of maize varieties/composites/ *hybrids suitable for Tamil Nadu, Coimbatore*	27600
27	Scheme for techno-economic survey of different districts of Tamil Nadu, Madurai	97300
28	*Scheme for development of hybrid rice, Coimbatore*	20000

29	Scheme for development of rice varieties suitable for Periyar Vaigai River Project Area, Madurai	99400
30	Scheme for research on temperate vegetables, Sandynallah	44300
31	Scheme for research on temperate vegetables, Kodaikanal	40400
32	Scheme for research on temperate Vegetables, Thadiyankudisai	24400
33	Scheme for establishment of regional laboratory, Tiruchi	260300
34	Scheme for establishment of regional laboratory, Paiyur	121200
35	Scheme for operationl research project for onfarm water management in the G. A. Canal Command Areas of Tanjore deltaic areas, Tanjore	33700
36	Scheme for operational research project for dryland technology at Manapparai and Ariyalur in Trichy district, Trichy	26100
37	Scheme for strengthening and coordinating rice virus and mycoplasma diseases, Coimbatore	39600
38	Scheme for strengthening and coordinating rice virus and mycoplasma diseases, Madurai	45200
39	Scheme for research on bunchy top virus disease, Thadiyankudisai	39100
40	Scheme for research on improvement of chillies in the southrn districts of Tamil Nadu, Paramakudi	94000
41	Scheme for research on potato virus disease, Sandynallah	15000
42	Scheme for establishment of Horticultural Research Complex, Kattupakkam	90400
43	Scheme for research on the improvement of cultivation of palmyrah palm, Srivilliputhur	176000
44	Turmeric research scheme, Bhavanisagar	66400
45	Scheme for synthesising high yielding superior quality and short duration specific and interspecific hybrid cotton for cotton for rainfed and irrigated tracts of Tamil Nadu, Kovilpatti	12200
46	Scheme for operational research project for the control of betelvine wilt diseases in Coimbatore district. Aliyarnagar	26400
47	Scheme for research on dryland forage crops of blacksoi regions of Tamil Nadu, Palani	65800
48	Scheme for the improvement of Edward rose and Red rose, Coimbatore.	19000
49	Scheme for the development of economical roofing materials, Coimbatore	46300
50	Scheme for the operational research project on efficient water management practices in tankfed areas of Chingleput district, Kancheepuram	71200
51	Scheme for the operational research project on efficient water management practices in tankfed areas of Ramanathapuram district. Aruppukkottai.	61100
52	Scheme for development of crop pattern for different agro-climatic zones, Coimbatore	123600

53 Scheme for development of crop pattern for different agro-climatic zones, Vellore	66200
54 Scheme for development of crop pattern for different agro-climatic zones, Tirunelveli	60100
55 Scheme for development of crop pattern for different agro-climatic zones, Paiyur	66000
56 Scheme for establishment of Seed Technology Unit, Madurai	209700
57 Scheme for the hybrid development by mass production of haploid and homozygous plants in hybrid rice and sorghum by anther and pollen culture, Coimbatore	60100
58 Scheme for improvemenf of Casuarina equisetifolia by selection, Trichy	2600
59 Scheme for the intensification of research on medium staple cotton types, *Srivilliputhur*	145000
60 Scheme for the intensification of research on medium staple cotton types, Kovilpatti	52200
61 Scheme for the intensification of research on medium staple cotton types, Paiyur	48000
62 Scheme for M. Sc. course in plant Nematology. Coimbatore	48100
63 Scgeme for establishment of a centre for Sericulture Coimbatore	100000
64 Scheme for starting post-graduate diploma in plant protection, Coimbatore	149800
65 Scheme for evolution of high yielding crop varieties suitable for LBP area, Bhavanisagar	48600
66 Scheme for starting of post-graduate diploma in plantation crops/ornamental gardening, Thadiyankudisai	60700
67 Scheme for strengthening of research on chemistry *of sub-merged soils of Thanjavur district Aduthurai*	38000
68 Scheme for establishment of regional laboratory Yercaud	126700
69 Sceeme for establishment of a unit for conducting research studies on mycotoxin, Coimbatore	56400
70 Scheme for studies on the nutritive value of new varieties and their changes due to modern agricultural and processing technology, Coimbatore	23900
71 Scheme for research on introduction of new tree spices, Coimbatore	34900
72 Scheme for research on introduction of new tree spices, Thiruvannamalai	23000
73 Scheme for research on introduction of new tree species, Vamban	8600
74 Scheme for research on introduction of new tree species, Tirunelveli	16500
75 Scheme for vegetable seed production, Palur	60900
76 Scheme for popularisation of Agricultural implements through Krishi Vigyan Kendra, Coimbatore	51500
77 Scheme for popularisation of agricultural implements through Krishi Vigyan Kendra, Madurai	59000

78	Scheme for evolution of medium staple cotton suitable for blacksoil rainfed tracts of southern districts, Kovilpatti	42800
79	Scheme for evolution of forage crops suited to the milk shed areas of north-eastern districts, Vellore	66600
80	Scheme for improvement of minor pulses and synthesising hybrid varieties of sesamum, Coimbatore	117600
81	Scheme for studies on the indigenous pesticides of plant origin, Coimbatore	11200
82	Scheme for establishment of rural observatory, Coimbatore	38000
83	Scheme for cost-price relationship in sugarcane and economic appraisal in Tamil Nadu, Coimbatore	15000
84	Scheme for seed production and seed storage studies in sub-tropical and temperate crops, Periyakulam	152900
85	Scheme for improvement of groundnut suitable for rainfed areas, Tindivanam	40200
86	Project for integrated, interdisciplinary collaborative research on sorghum, Coimbatore	42500
87	Scheme for studies on wilt and button sheeding in coconut, Nagercoil	63600
88	Scheme for improvement of sunflower, Tindivanam	82000
89	Scheme for development of breeders' seed of millets, Kovilpatti	57400
90	Schme for production of breeders' seed of millets, Vamban	27000
91	Establishment of nematology laboratory, Kancheepuram	178900
92	Establishment of nematology laboratory, Trichy	172400
93	Scheme for establishment of biological laboratory, Paiyur	97100
94	Scheme for production of breeders' seed in paddy. Aduthurai	83300
95	Scheme for improvement of Manjamakkattai and Thalaivirichan cholam, Vamban	69200
96	Scheme for upgrading the Sugarcane Experiment Station, Cuddalore	133600
97	Scheme for strengthening the Multi-Crop Experiment Station. Palur	47000
98	Scheme for multiplication and distribution of pulses, Vamban	

Animal Sciences - Plan Schemes

1	Livestock Research Station, Kattupakkam	2599700
2	Farmers' Training Centre Pudukkottai	117700
3	Mecheri Sheep Research Station, Pottaneri	118700
4	Pasture Development Research Project, Pottaneri	93300
5	Scheme for genetic improvement of mutton sheep, Kattupakkam	243500
6	*University co-ordinated research project on fodder crops, Coimbatore*	*63600*
7	University coordinated research project on fodder crops, Kattupakkam	71300
8	University coordinated research project on fodder crops, Sandynallah	33200
9	Scheme for the *investigation of feed substitutes for* pigs and poultry, Kattupakkam.	8200

10	Scheme for the establishment of quality control and service division of animal feeds, Madras	127100
11	Starting of Ph. D. programme in Pharmacology, Madras	127400
12	Starting of Ph. D. programme in obstetrics and Gnaecology, Madras	50800
13	Department of animal disease investigation and control, Madras	312700
14	Making "Cheiron" a bimonthly journal, Madras	50800
15	Scheme for establishment of radio isotope and trace mineral nutrition lab., Madras	543400
16	Poultry Research and Development Centre. Namakkal	118700
17	Poultry Research and Development Centre, Madurai	153000
18	Poultry Research and Development Centre, Rajapalayam	214700
19	Poultry Research and Development Centre, Trichy	160400
20	Poultry Research and Development Centre, Tirupur	129200
21	Poultry Research and Development Centre, Vellore	208000
22	Poultry Research & Development Centre, Pudukkottai	150000
23	Farmers' Training Centre, Kattupakkam	199100
24	Livestock Research & Development Centre, Tirunelveli	136800
25	Livestock Research & Development Centre, Erode	167600
26	Livestock Research & Development Centre, Dharmapuri	195200
27	Livestock Research & Development Centre, Nagercoil	206900
28	Scheme for strengthening of bio-chemistry section	32200
29	Scheme for starting Ph. D. programme in Therapeutics	135600
30	Scheme for research on tropical bovine Theileriasis, Madras	166800
31	Scheme for studies on the influence of a flatoxicosis on the immune response of cattle protected against rinderpest, Madras	137400
32	Director of animal health, Madras	154400
33	Establishment of poultry prouduction training centre, Madurai	110200
34	Scheme for the establishment of entomology research unit in the Department of Pathology, Madras	166100
35	Scheme for enrichment of poor quality cellulosic wastes and pelletting for maintenance of work bullocks and cows yielding less than five litres of milk, Coimbatore	30000
36	Scheme for enrichment of poor quality cellulosic wastes and pelletting for maintenance of work bullocks and cows yielding less than five litres of milk, Kattupakkam	30400
37	Scheme for the control of abortion in cattle, Erode	90000
38	Scheme for the control of abortion in cattle, Coimbatore	80000
39	Scheme for the control of abortion in cattle, Trichy	80000
40	Scheme for strengthening the Department of Animal Husbandry, Madurai	40000
41	Establishment of Institute of Animal Nutrition, Kattupakkam	353500
42	Scheme for research project on electron microscopical and ultr-structural studies on rhinosporidiasis in nasal polyps of animals and man, Madras	80000

Fishery Science - Plan Schemes

1	Scheme for culture of brime shrimp Artemia salina, Tuticorin	36800
2	Scheme for pollution monitoring studies in Tuticorin waters, Tuticorin	28200
3	Scheme for mariculture of fishes, Tuticorin	35300
4	Scheme for brackishwater pen culture, Tuticorin	33400
5	Scheme for ORP on fish culture, Pondicherry	26500
6	Scheme for ORP on fish culture, Aduthurai	23800
7	Scheme for ORP on fish culture, Killikulam	20000
8	Scheme for ORP on fish culture, Madurai	35400
9	Scheme for the establiehment of a mariculture research station, Ennore	78800
10	Starting of M.F.Sc. course. Tuticorin	50000

ICAR Schemes Fully Financed

1	Scheme for establishment of a Department of Food Science, Coimbatore	48400
2	Scheme for establishment of a Manpower Planning and Placement Cell, Coimbatore	39000
3	Scheme for strengthening Department of Agricultural Entomology, Madurai	100000
4	Scheme for establishment of a new wing for research and teaching on Veterinary Public Health and Epidemiology, Madras	66000
5	Scheme for influence of climate on ontogenic changes in determining evapotranspiration and biomass production in sugarcane, Cuddalore	31600
6	Studies on intercropping system and breeding horsegram for high yielding character and suitability for intercropping system, Kovilpatti	9500
7	Scheme for production of super elite and elite sunflower seed, Bhavanisagar	414500
8	IDRC research project on sesamum, Vridhachalam	201200
9	Intensification of research and training in pulses and oilseed crops, Aduthurai	161700
10	Intensification of research and training in pulses and oilseed crops, Kovilpatti	109000
11	Intensification of research and training in pulses and oilsaed crops, Vridhachalam	102800
12	Scheme for improvement of existing downy mildew resistant maize varieties for yield and suitability to rainfed farming systems in Tamil Nadu, Coimbatore	46800

59	Scheme for utilisation of tree leaves as a source of *fodder during winter in mountain regions, Sandynallah*	60200
60	All India Coordinated project for strengthening agricultural research programmes for the socio-economic development, Sandynallah	296100

ICAR Schemes - Partly Financed

1	Integrated scheme for water management and soil salinity, Bhavanisagar	270800
2	All India Co-ordinated agronomic research project-for staff at headquarters, Coimbatore	166200
3	All India coordinated agronomic research - Model agronomic experimenrs, Bhavanisagar	74900
4	Integrated scheme for water management and soil salinity, Madurai	281200
5	All India coordinated research project for the improvement of wheat, Coimbatore	114800
6	All India coordinated research project for dryland agriculture, Kovilpatti	332400
7	All India coordinated research project on sugarcane, Cuddalore	48800
8	All India co-ordinated agronomy research project - Experiments on cultivators' fields, Villupuram	145800
9	All India co-ordinated agronomy research projects - Experiments on cultivators' fields, Trichy	158000
10	All India co - ordinated agronomy research projects - Experiments on cultivators' field, Salem	136200
11	All India co-ordinated agronomic research projects - Model agronomic experiment, Tanjore	82400
12	All India co - ordinated agronomic research projects - Model Agronomic experiment, Karaiyiruppu	84700
13	All India co - ordinated research project on oilseeds, Coimbatore	812400
14	AICORPO - off - season nursery project, Aliyarnagar	235300
15	All India coordinated research project on oilseeds, Main centre for groundnut, Vridhachalam	207600
16	All India coordinated research project on oilseeds, Sub - centre for castor, Tindivanam	72400
17	All India coordinated rice improvement project, Coimbatore	286300
18	All India coordinated rice improvement project, Aduthurai	219900
19	*All India coordinated rice improvement project, Madurai*	20100
20	All India coordinated research project for improvement of millets, Coimbatore	198100
21	All India coordinated research project, for improvement of sorghum, Coimbatore	348900

22	All India coordinated research project on jute and allied fibres, Coimbatore	57300
23	All India coordinated cotton improvement project, (Breeding and Agronomy), Coimbatore	268700
24	All India coordinated cotton improvement project, (Breeding and Agtonomy), Kovilpatti	140000
25	All India coordinated cotton improvement project, (Breeding and Agronomy), Srivilliputhur	301000
26	All India coordinated research project for intensification of research on the improvement of pulses, Coimbatore	473000
27	All India coordinated research project for intensification of research on the improvement of pulses, Vamban	399400
28	All India coordinated research project on soybean, Coimbatore	55200
29	All India coordinated research project on forage crops, Coimbatore	202200
30	All India coordinated research project on nematode pests and their control, Coimbatore	141400
31	Scheme for coordinated research on biological nitrogen fixation, Coimbatore	29900
32	All India coordinated research project on seed - borne diseases, Coimbatore	34600
33	All India coordinated research project on tuber - crops (other than potato), Coimbatore	94800
34	All India coordinated vegetable improvement project (including chillies) Coimbatore	229800
35	All India Coordinated vegetable improvement project (including Chillies), Kovilpatti	64900
36	All India coordinated fruit improvement project, Coimbatore	343400
37	All India coordinated improvement project for medicinal and aromatic plants, Kodaikanal	190900
38	All India coordinated spices and cashew improvement project, Coimbatore	92700
39	All India coordinated spices and cashew improvement project, Vridhachalam	151600
40	All India coordinated coconut and arecanut improvement project. Veppankulam	328400
41	All India coordinated fruit improvement project (Citrus dieback), Periyakulam	172100
42	All India coordinated coconut and arecanut improvement project, Coimbatore	50100
43	All India coordinated floriculture improvement project, Coimbatore	165800
44	All India coordinated fruit improvement project, Aruppukkottai	68900
45	Scheme for research on cardamam, Yercaud	99200

46	Scheme for studies on harvest and post-harvest technology, Coimbatore	169900
47	Scheme for energy requirement in intensive agricultural production, Coimbatore	11[illegible]400
48	All India coordinated scheme for research and development of farm implements and machinery and production of prototypes and their evalution under differenf agro-climatic conditions, Coimbatore	465800
49	Scheme for intensive testing of power tiller and research and development of new machineries to make them versatile	84100
50	Scheme for coordinated programme of research on bio-gas, Coimbatore	88400
51	All India coordinated research project on longterm fertilizer experiments, Coimbatore	51000
52	All India coordinated scheme on micro-nutrients of soils, Coimbatore	162400
53	All India coordinated scheme for studies on measurement, evaluation and improvement of soil physical conditions to increase agricu'tural production of problematic areas, Coimbatore	200900
54	All India coordinated scheme for investigation on correlation of soil test with crop response, Coimbatore	195200
55	All India coordinated research project on under-utilised and under-explcited plants, Mettupalayam	49500
56	All India coordinated research project on poultry for meat, Teynampet	677500
57	All India coordinated research project on sheep for fine wool, Sandynallah	600000
58	All India coordinated research project on composite culture of Indian and exotic fishes and fish seed production, Tuticorin	584[illegible]0

Government of India Schemes - Financed Direct :

1	Comprehensive scheme for studying the cost of cultivation of principal crops in Tamil Nadu Coimbatore	651100
2	Scheme for the use of native viral and fungal pathogens in pest control and their safety for beneficial insects and vertebrates, Madurai	15500
3	Project relating to the setting up of sand parboiling-cum-drying unit of one tonne per hour capacity, Tiruvarur	10400
4	Scheme for the consrruction of demonstration bio-gas plant, Coimbatore	18000
5	Scheme for the establishment of Agro-energy Centre Coimbatore	369300
6	Setting up of regional centre for the develoomant of biogas, Coimbatore	319400
7	Paddy Processing Research Centre, Tiruvarur	624300
8	Scheme for integrated studies on recycling of organic wastes, Coimbatore	43200

Government of India Schemes - Financed through the State Directorate of Agriculture

1	Scheme for the development of Sugarcane, Melalathur	33900
2	Scheme for the development of sugarcane, Sirugamani	31800
3	Scheme for the development of sugarcane, Cuddalore	10000

Government of India Schemes - Partly Financed

1	Scheme for intensive cotton development programme, Kovilpatti	69600
2	Scheme for intensive cotton development programme, Bhavanisagar	22200

Other Agencies

1	Scheme for methods of improving productivity of Periyar-Vaigai irrigation system. Madurai (Ford Foundation)	92100
2	Programme of awarding fellowship to women students to pursue post-graduate studies, Coimbatore (Ford Foundation)	83200
3	IFPRI sponsored collaborative research on growth linkage effects of green revolution of regional income and employment in Tamil Nadu, Vellore (Ford Foundation)	252400
4	Training women in enterprise management to encourage their participation in rural development, Coimbatore (Ford Foundation)	79600
5	All India coordinated research project on Weed control, Coimbatore (PL 480)	165700
6	Scheme for land and water use planning of watersheds, Coimbatore (PL 480)	62700
7	Scheme for tree improvement in Eucalyptus tereticornis, Mettupalayam (PL 480)	85300
8	Scheme for soil conservation measures for dryland based on soil loss equation, Coimbatore (PL 480)	108200
9	Scheme for coordinated research programme in solar energy, Coimbatore (PL 480)	142500
10	Scheme for Mycorrhizal association in tropical pines grown in the Nilgiris, Sandynalla (IFS, Sweden)	30000
11	Scheme for the effect of pesticides on metabolic activities of soil micro-organisms, Coimbatore (International Atomic Energy Agency, Vienna)	18200
12	Scheme for tree improvement programme. Mettupalayam (South India Viscose Limited and Shesasayee Paper & Boards Limited)	109800
13	Scheme for testing SNI 50 EC against stored grain pests, Coimbatore (Sandoz India Limited)	10000
14	Scheme for research on integrated control of Prodenia litura on cotton and chillies, Madurai (Hindustan Lever Limited)	27700

15	*Scheme for testing of chemicals - micronutrients, insecticides etc.,* Madurai (Stanes & Company, Coimbatore)	5000
16	Scheme on biology, fishery and culturability of commercially important crabs Scylla serrata Tuticorin (CSIR)	15000
17	Scheme for studying the fouling problem of cooling towers and its control, treatment disposal and utilisation of effluents, *Tuticorin (SPIC, Madras)*	64200
18	Scheme on the utilisation of coir pith as manure in agricultural farms Madurai (Central Coir Board)	52800
19	Scheme for studying comparative performance of ammonium chloride as a source of nitrogen and its effect on soil fertility, *Madurai (Tuticorin Alkali Chemicals and Fertilizers)*	54800
20	Scheme for studying comparative performance of ammonium chioride as a source of nitrogen and its effect on soil fertility, Ambasamudram	40900
21	Scheme for studying comparative performance of ammonium chloride as a source of nitrogen and its effect on soil fertility, Sirugamani	41300
22	Scheme for studying comparative performance of ammonium chloride as a source of nitrogen and its effect on soil fertility, Tirurkuppam	36400
23	National Scheme of Training of Rural Youth for Self-Employment (TRYSEM), KVKs, *Coimbatore, Trichy and Madurai (Directorate* of Agriculture)	50000
24	Scheme for pilot project for optimisation of resources used for farm development in Tamil Nadu, Coimbatore (Directorate of Agriculture)	67100
25	Preparation of district plan for Coimbatore district, Coimbatore (State Planning Commission)	60000
26	Scheme for evolution of early maturing high yielding medium staple varieties of cotton, Paiyur (SIMA)	67400
27	SIDA aided social forestry project, Dharmapuri (State Department of Forests)	43500
28	*Instalment of Nocil film technique, Coimbatore (NOCIL, Madras)*	4500
29	Seheme for research work on preserving 'Neera' and improving the flavour and keeping quality of jaggery, Coimbatore (K & VIB)	41300
30	Scheme for research on medicinal and aromatic plants, Yercaud (State Chincona Department)	104100
31	Scheme for research on the control of cincona diseases, Sandynallah (State Chincona Department)	26200

APPENDIX - II

List of Books and Booklets Published

Books in English

1 Crop Production Manual
2 Audit Report
3 Demand for water in T. N.
4 MAJ. Platinum Jubilee (special issue)
5 Platinum Jubilee Souvenir
6 Research Highlights
7 XIth Annual Report
8 Pathogenecity thesis
9 International Seminar on Field Research

Booklets in English

1 Water Technology
2 G. V. *Chalam Memorial Lecture*
3 Tractor
4 Lab-to-Land Programme
5 Betelvine
6 Method Demonstration
7 Introducing College Agrl. Engineering.

Booklets in Tamil

1 பயிர் வளர்ச்சி ஊக்கிகள்
2 வெங்காயம்
3 சேமிப்பு தானியங்களைத் தாக்கும் பூச்சிகள்
4 புதிய பயிர் இரகங்கள்
5 வெற்றிலை
6 பூசனக்கொல்லிகள்
7 பூச்சி கொல்லி மருந்துகள்
8 களைக்கொல்லிகள்
9 வேளாண் விரிவினையில் விரிவாக்க வழிமுறைகள்

APPENDIX - III

Research Papers Published

AGRICULTURAL BIO-CHEMISTRY

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5 Krishnaveni, S. and S. Sadasivam 1982. Carbohydrate constituents of yambean tubers. South Indian Hort. 30 (2) : 87-90.

6 Parvathy, K. and S. Sadasivam 1982. Comparison of amylase activity and carbohydrate of amylase activity and carbohydrate profile in germinating seeds of Setaria italica, Echinochloa frumentacea and Panicum miliacium Cereal Chem. 59(6)

7 Theymoli Balasubramanian, D. Raj, R. Kasthuri and P. Rengasamy. 1982. Capsaicin and plant character profile in chillies. Indian J. Hort. Sep.-Oct.

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3 Krishnaswami, S. and M. Rathinam. 1982. Studies on mutagenic sensitivity in greengram Vigna radiata L. Wilzek - Relative sensitivity to ethyl methane sulphonate Indian J. agric. Res., 16 : 47-50.

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6 Muralidharan, V. and V. S. Raman 1982. Cross compatibility and reproductive efficiency in hybrids of bunch groundnuts with A. monticola Tropical oilseeds Abst , 7 (10) : 182

7 Muralidharan, V., V. S. Raman and A. Narayanan 1982. A case of restricted recombination in Arachis Tropical oilseeds Abst., 7 (10) : 181

8 Narayanan, A., V. S. Raman and N. Sundaram 1982. Achievements and inferences in groundnut breeding Tropical oilseeds Abst., 7 (10) : 180

9 Narayanan, A and V. S Raman 1982. Metaxenia and certation in groundnut Tropical oilseeds Abst., 7 (10) : 182

10 Raman, V. S. 1982. Aneuploids in groundnut breeding. Tropical oilseeds Abst. 7 (10) : 182

11 Raman, V. S. 1982. Nature of chromosome pairing in induced polyploids of Arachis Tropical oilseeds Abst., 7 (10) : 182

12 Raman V. S. and A. Narayanan 1982. Natural hybridisation in Arachis. Tropical oil seeds Abst. 7 (10) : 182

13 Rangasamy, M and M. Rathinam. 1982. Mutagen induced male-sterile lines in sesame Indian J. Genet , 42 : 142-143

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Page	Para	Line	Read	For
2	(vi)	5	Water	Wate
2	(vii)	7	Power	Powers
2	*Item*	16	*an*	*a*
9	Item	32	Professor	Professors
9	Item	2	Creation	Ceation
9	Item	4	draft	craft
14	Item	5	Oceanography	Occanography
15	—	4	10,296	10,295
15	—	6	Horticulture, Agricultural Engineering, Fishery Science	Horticulture, Fishery Science
23	1	5	Charge	Chance
25	4	10	maida and suji	maida suji
27	3	2	volunteers	voluntears
28	5	1	iv	v
28	9	3	Ludhiana	Luhiana
28	9	5	Foundry	Foundary
29	NSS	1	was	were
29	NSS	8	campacting	camacting
30	2	8	III B.Sc. (Ag.)	III R.Sc. (Ag.)
31	NCC	5	defence	defende
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38	5	8	fowls and planting	fowls planting
39	4	1	radio, T.V.	radio and T.V.
39	5	8	Fishery Technology and Central Marine	Fishery Technology, Central Marina
41	1	7	116	166
41	5	3	Participants Attended	Participant Attended
42	2	1	lectures and practicals	lectures practicals

ge	Para	Line	Read	For
4	10	3	Library read 51, 231 books	Library 51, 231 books
6	4	1	predatory	pre, tory
47	5	10	dose	does
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49	6	5	saving of	saving O'
49	11	1	synthetic	synthetig
50	7	3	dose	does
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52	5	3	N	V
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55	5	15	Kent, the	Kent The
55	10	2	stove and saronius	stove saronius
56	11	8	severe	cevere
57	12	3	dose	does
58	9	3	enough	enought
59	13	1	palmyrah	palamyar
60	5	4	sundrying, grinding	sundrying and grinding
60	5	5	recipes were	recipe were
62	10	6	ponds	pcnds
62	10	18	registered	registeed
63	5	2	prawns	prowns
63	8	9	effluents	efflrents
64	5	21	underwent	underwend
65	1	7	0.70 and 0 90	0.70, 0.90
65	2	5	choice	coice
65	6	9	lack	laok
66	2	10	expressed	experessed
68	2	2	communication	communicatiho
68	2	3	times	timee
68	2	4	meat	mset
68	2	9	made	mady
68	3	5	Valarum Velanmai and	'Valarum Velanmai'
		6	'Kalnadai Kathir'	'Kalnadai Kadir'
68	5	3	course	coursa
68	6	1	slides	slide
14th Photo after		P. 68	Adoption	Adotion
69	7	4	demonstrations	demonstration

Page	Para	Line	Read	For
69	8	6, 7,	Husbandry	Husband
		8	Pre-release	pre-relea
			I. A. S.	I. A.
70	1	2	Nationalised	Nationlisep
Appendix I				
(i) Item 2			Surveillance	Surveilance
(iii) Item 47			blacksoil	blacksoi
(iv) Item 69			an unit	a unit
(vii) Item 9 from top			establishment	establehment
Appendix III P (iii) Agricultural Entomology			Seasonal	Seasona

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